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IN THE SUPERIOR COURT,

State of California, County of Sacramento.

OCTOBER SESSION, 1881.

HON. JACKSON TEMPLE, - - - - - PRESIDING JUDGE.

WINFIELD J. DAVIS, OFFICIAL REPORTER.

SAMUEL OSBOURNE AND WILLIAM M. CUTTER, REPORTERS.

The People of the State of California,

vs.

The Gold Run Ditch and Mining Co. }

COUNSEL:

For Plaintiff,

HON. A. L. HART, Attorney General, GEORGE CADWALADER, ISAAC S.
BELCHER, A. L. RHODES, RICHARD BAYNE.

For Defendant,

J. K. BYRNE, W. C. BELCHER, S. M. WILSON, W. T. WALLACE, A. B.
DIBBLE, A. P. CATLIN.

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In the Superior Court
of the State of California
in and for the County of
Sacramento

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Wm. F. Jones
Official Reporter

Monday afternoon Dec. 12th 1881.

J. L. Gould - Recalled

Cross-examination resumed.

Mr. Hart - Now Mr. Gould: I understood you to say that the top of this pit was composed of sand and some pipe clay and some hard rock?

A I said that it was composed of fire rock or small rock.

Q That is the top of the bed?

A You are now speaking of what?

Mr. Hart - I am speaking of what has been done by the Gold Run Mining Company?

A No sir. I expect that was blue gravel.

I understood you, in your examination in chief, to speak of the top, above 170 feet: that it was composed of hard rock in small portions? Greatly of sand and some pipe clay?

The witness - The top washing?

Mr. Hart - No? The top of the pit?

washed by the Gold Run company?

A. I said that was blue gravel.
Boulders.

Q. Did I understand you to say that there was no difference between the character of the material from the top of the pit to the bottom of the pit? And when I speak of the pit, I speak of the washings of Gold Run Proper?

A. I say that there is a difference?

Q. What is the difference?

A. From 60 to 70 feet from the bed-rock up is cemented and boulders. And above that. There they are large boulders. Above that the boulders are not as large or thick. But there are a great many boulders. And gravel and sand.

Q. Is there a greater proportion of gravel or a greater proportion of boulders in the upper part, 70 feet above? Above there, 70 feet?

A. I should judge that the upper portion would not be as great as the lower portion.

Q. I don't understand you? I ask you whether there is a greater proportion of gravel or a greater proportion of

boulders above? In the upper part?
70 feet up?

A- I should say the boulders are not as large in the upper portion.

Q- I am not speaking of the comparative size of the boulders in the upper or lower portion. Let the reporter read the question again, it is clear and plain.

The reporter reads:

A- I think there is a greater proportion of gravel. I think there is a greater proportion of there than there is in the lower part.

Q- Which is greater in proportion? the boulders or the gravel? In the upper portion and above the 70 feet?

A- There is a greater proportion of boulders.

Q- More boulders than gravel in the upper part?

A- I think there is
Q- When you speak of boulders, what do you mean?

A- I call this a boulder here (showing) a small boulder.

Q- This is a cobblestone is it not?

A It might be termed a cobblestone, perhaps.

Q Do you include cobblestones in boulders?

A Yes I did in that case.

Q Now then is the greater ^{proportion of that} part ~~of that~~ composed — that upper part — composed of stones as smaller or smaller than that cobble stone? Or of stones larger than that?

A The stones are from the size of a cobble stone up. I think there is a greater proportion of stones as large or larger than a cobble stone.

Q A greater proportion of stones as large as a cobble? From that point up?

A Yes sir.

Q That is in the upper part of the pit, and above the 70 feet?

A Yes sir.

Q A larger proportion of these stones than of the gravel?

A Yes sir.

Q Where did you take this from?

A From the pit.

Q From the bottom of the pit?

A That came off, I suppose from

a place ~~two or three~~ of three or four feet from the bedrock.

Q How far up does that material extend?

A It extends 10 feet, in places.

Q That is what you call the hard cement?

A Yes sir.

Q Will that dissolve in water?

A ~~Yes~~ No sir.

Q It will not.

A No sir.

Q Now we will take a glass of water and put that in it. And let us see whether it will dissolve or not.

Mr Byrnes - We would like to have that marked some way so that it can be designated here after?

Mr Hart - We will mark it after wards.

The witness - It will dissolve, as soon as it is air-slacked. It will air-slack.

Q Then after it is in water it will dissolve?

A It will when it has been air-slacked.

Q What do you mean by air-slacked?

A. Coming in contact with the air, then it will become porous and dissolve.
 Q. After that has been brought in contact with ~~the~~ water and then allowed to be in contact with air. ~~Will it~~ ^{A. It will} dissolve? It will slack some, but not much.

Q. What will it produce when it does that?

A. I do not know.

Q. Will it not produce a majority of sand?

A. I don't know sir.

Q. Did you never try it? ^{'et}

A. I do not think we ever washed much of that. Only where we blasted up from the rock, we intended to get down within six feet of the rock if we can. The balance we leave to be ground ^{up} in ^{a mill} the material. This cement there - well there is cement for about 60 or 70 feet deep. It is not as hard or as fine for 30 or 40 feet as it is near the bed-rock?

Q. At this place?

A. Yes sir

Q. It is harder here than ?

it is up a little?

A. Yes sir, It is harder there than it is for 30 feet or so.

Q. No ~~allow~~ allow that to become completely saturated with water, and then to be carried down for a distance of that makes the length of your tunnel by water running with sufficient rapidity to carry off the rocks, will it not be completely ground up?

A. No sir. It is not.

Q. It is not?

A. No sir.

Q. What is to prevent its being ground up under those circumstances?

A. It is so firm and so hard. It is rocky, like this very near by.

Q. It is too hard?

A. Yes sir. It is very hard.

Q. Like this?

A. Very nearly.

Q. You will find that produces sand now, if it comes of [shaving]? Where does this other material come from?

A. That is a specimen that came from ten feet of the surface

on the East rim. Where we washed last year.

2. Mark that? How shall we have these marked?

Mr. Byrne? Let them be marked as fossil specimens "one" "two" and "three".

Mr. Hart - Very well?

Mr. Hart - Speaking of No. three where does that come from?

A From 10 feet from the surface
2. On ^{which} each side?

A On the East rim.

2. On the East rim of the ^{clay} plain?

A Of the ~~east rim~~ bed.

2. Of the Pit?

A Yes sir.

2. How much of that did you wash out?

A That was a little piece that was left, that I spoke of this morning; as having been washed off last year.

2. Where did this come from?

A 50 feet below.

2. This is the third one?

A Yes sir.

2. This is 50 feet from No. 3.

A Yes sir.

Q Now number two comes from 50 feet from where No. 3 came from?

A Yes sir.

Q On which side

A Right below it, on the east side.

Q On the other side?

A No sir.

Q You say that No. 2 comes from near the east side, and cannot be found in any other place?

A No sir. It can be found if ^{not} washed away in every place. Where it may be washed.

Q And there is where it is found?

A Yes sir. That is where I took it from.

Q 50 feet below, this is No. 2?

A Yes sir.

Q How far down does this No. two extend?

A It is from the point where the work commences.

Q From the point where it commences in the bed, down there, where it is to be extended?

A This was not there, 50 feet from the bottom of the washing, 50 feet

below this one, I think. Though I do not know exactly how far. This came from right on the rim of the rock. Then this kind goes down to the boulders. On this side of the channel.

Q Now I understand you to say that all the balance of the pit is composed of that kind of material, like No. one.
A No sir I did not say that.

Q Well, have you any specimens of the balance of the pit?

A No sir. I have not got any here.

Q What is the balance of the pit composed of?

A Of cement. But not as hard and firm cement as that. After you get up twenty or thirty feet, it is some what different. You can not wash it. Putting a pipe against it will have no effect upon it whatever. A stream of water wont affect it. You have to blast it. But as I said before, ^{it} this is not as firm as this.

Q Is it all composed of that kind of material that you have to blast for the rest of the distance?

A There is 70 feet, about, like this.

Q Well, above the 70 feet?

A No sir.

Q What is that composed of?

A Rock and sand and gravel.

Q How many feet is there of the rock and sand and gravel?

A In the Indiana Hill claim, I think there must have been ~~some~~ ^{some} a space of 90 feet of it. I expect there was as much of it as that.

Q This is from the place where you commenced to wash?

A Yes sir.

Q There is 90 feet of rock and sand and gravel?

A Yes sir.

Q Now can you wash that with water?

A Yes sir, There are some places where we have blasted, But as a general thing you can ^{cut} get it with a pipe, with a heavy pressure.

Q Now in bring down your specimens, for the purpose of determining as to the character of the material washed in your claim, why didn't you bring

that portion that was washed out by the hydraulic process,!

A Well I saw, a gentleman that was up there from here getting a specimen. He brought up a ^{bucket} ~~box~~ full of that ~~same~~ same material. And I supposed he would have it down here.

Q Who was that?

A I think his name was Huntley. I think that was the man.

Q That is the reason that you did not bring any of that portion, that you washed out in the hydraulic mining?

A Yes sir.

Q That you washed out there?

A Yes sir.

Q That can be hydrauliced?

A Yes sir.

Q Which is the best paying material of the several formations?

A That is the lower portion, for sixty or 70 feet.

Q Do you use the hydraulic process at all for the purpose of mining the lower 60 or 70 feet?

A Yes sir.

Q What is the average of pay to the cubic yard? in the best paying part of your mine?

A I can not tell you that sir. It is all washed out together.

Q What is the average pay per cubic yard of the whole?

A I have never figured it up. In washing this material here, taking the whole pit, I do not know what it would average. I never figured or estimated upon it.

Q You say you don't know?

A I never estimated?

Was it over ten cents?

A Taking the whole pit, I think it is not. ~~24~~

Q You think it is not over ten cents?

A No sir.

Q Is it over five?

A I should suppose it was.

Q What did the top wash average? from four to twelve percent?

The witness - You speak now of what is called the red gravel.

Mr. Hart - No sir; I am speaking of the top wash of this company?

that portions of their washings? And I am confining my examination purely to the works of the Gold Run Company in that pit?

A. I have no calculation made at all as to the amount it paid per yard on the top ~~rock~~ where we commenced to wash.

Q. Where is it that you say that rock composes 75 to 80 percent?

A. I took the entire bank of blue gravel, from the bedrock up, for ~~the~~ 60 to 80 feet. For 60 feet, say.

Q. There is 75 percent of rock there?

A. Yes sir.

Q. And what else?

A. It is rock.

Q. Rock alone?

A. Yes sir.

Q. Does not cement have something to do with it? And form part of that 75 percent or 80 percent.

A. No sir.

Q. Didn't you testify this morning that it did?

A. No sir.

Q. Didn't you swear this morning that it did?

A - No sir.

Q Is not that blue, gravel?

A The bottom is composed of boulders.

Q ~~(interrupting)~~ about 75 to 80 percent.

Q ~~(interrupting)~~ and gravel?

A About 75 percent to 80 percent.

Q Do you intend to swear that that is from 75 to 80 percent in solid rock,

A I have given you my opinion.

Q How do you make that calculation?

A I saw it washed.

Q That is the way you make that calculation?

A That is proof to me that it is pretty near all boulders, and cobble.

Q In making your estimate of 75 to 80 percent of this material, do you take into consideration that portion which you say can be washed away? The first 70 feet?

A Yes sir. Going above that.

Q Going above that, and starting 70 feet up, what proportion is in rock?

A I think the proportion would not be as great as I said before. Not so great as it is from 70 feet down to the bed rock.

Q Do you say from 75 to 80 percent

solid rock?

A Yes sir.

Q What is the proportion of rock above that? What is the proportion of rock and gravel?

A I don't know.

Q Is it as much as fifty percent?

A I think it is a great deal more than that.

Q You have made no investigation or research by which you could determine that?

A No sir. Only from what I see of the washings.

Q What is your basis of knowledge upon this subject? Have you made any test of any part of this material, other than to see it washed out?

A No sir.

Q After it was washed out and had gone to the mouth of the tunnel have you ever tested it there?

A No sir. I know ~~the~~ nothing about it only what I got there by observation.

Q Have you gone to the mouth of the tunnel to see what kind of

water was coming out?

A. A great many times.

Q. Have you ever taken any vessel there and taken up any of the material or water that came out, for the purpose of determining its proportions?

A. I never have.

Q. Now under this cement a rock strikes this gorge in the mountains known as canon creek, what effect does it have upon this cemented rock, rolling down that thousand feet?

A. I don't know, I never examined.

Q. Do you know whether it crumbles the rock or cement?

A. I do not, I never traced it down.

Q. There is an undercurrent there, is there not?

A. Yes sir, several of them.

Q. What is it that strikes that undercurrent? what kind of material?

A. All the material that is washed out of the claims there.

Q. Large and small?

A. Yes sir.

Q. Now how do you determine, as an expert, — if you are an expert — what

amount of material will be washed by a miners' inch of water..

A. I only determine it by the amount that has been washed out with a certain amount of ~~water~~ water.

Q. How do you determine it without know what has been washed out?

A. I could not do it.

Q. Is there not some means for determining how much dirt, water will wash out?

A. I presume there is, But I don't know anything about it.

Q. Will water wash soft dirt faster than hard dirt?

A. Certainly. It depends on the material. Whether it is light or heavy.

Q. Will water wash heavier material faster than it will light, or will it wash light material faster than it will heavy?

A. The light material will wash easier and faster.

Q. If you were making an estimate this morning as to the amount that had probably been washed out by the

people who ran or worked this mine before this company commenced working there? You said that certain portions could be washed a great deal easier than could be ^{washed} now. Some portions that had been washed? Now how much of light material with a miner's inch wash.

A. It depends on the grade of course. And on the sluices,

Q. In the same grade and the same sluices that these first companies had,

A. I do not know how much it will wash.

Q. Or the same that you have?

A. I don't know, I give it simply as my opinion that the water would wash four or five times more of the top than it would of this cement gravel rock.

Q. any kind of material that would wash out at the rate of twenty cubic yards per miner's inch of water?

A. I do not know sir

Q. Then when you say five times as much would be washed out, you mean five times as much as the upper

stratum of this bed here.?

A - I mean five times as much as the average of what remains in that ~~excavation~~^{claim}, from 120 feet deep.

2 - ~~Five~~ times as much as the average?

A - Yes sir.

2 - How much, did you say, this morning, would be washed out of the lower 70 feet in this mine, per miners inch?

A - I estimated 120 feet, that was remaining to be washed out in the channel. I said that we could wash from $2\frac{1}{2}$ to three cubic yards, by an inch of water.

2 - Could you say or did you say what amount would be required to wash the lower 70 feet?

A - I did not say.

2 - How much do you say now?

A - Perhaps two or two and one half cubic yards, per inch.

2 - You said this morning that there were 1,124,000 inches used in washing out this excavation?

A - Yes, I believe so.

2 - That is with reference to the testimony

of this man Mr. Grusky!

A - Yes sir.

Q - How many cubic yards are there in this excavation!

A - I think there are about 4,300,000. As near as I can remember.

Q - Did you ever measure that?

A - Mr. Uren measured it.

Q - Did you ever measure it?

A - No sir.

Q - He made 4,300,000 cubic yards?

A - Yes sir.

Q - That would make how many cubic yards washed out by a miner's rich of water, allowing 1,124,000 cubic inches of water to be used? 1,124,000 cubic inches or inches of miners water?

~~It~~ Nearly four cubic yards, would it not? or what do you say?

A - You could reckon it up I suppose.

Q - Is it not more than four cubic yards to the inch?

A - No sir it is not.

Q - It is not.

A - No sir, I think not.

Mr. Belcher. It is easy to make the computation.

Mr. Hart - Mr. Gumsky testified that there were 4,532,280 cubic yards there? If two cubic yards would be washed by a miner's inch, of such material as you have there, or such as compose that lower 70 feet, how much would have to be washing in the upper portion of that pit, per miner's inch, in order to make up the legitimate amount here? in order to get these figures? Over four million cubic yards were washed by one million miner's inches?

A. I would have to know how many cubic yards there were of that material.

Q. Do you mean to be understood as testifying here, or did you undertake to testify, as an expert, as to the number of cubic yards that one miner's inch will wash on that mine?

A. I do not claim to be an expert at all. I can only tell what I know has been washed out. And the amount of water that has been used.

Q. You stated in your examination this morning; or during what year did you use this 1,400,000 inches

A. From the winter of 1875-'6 to 1881

2- To the winter of 1881

A- Yes sir.

2- Including the winter of 1881?

A- Yes sir.

2- You worked there during the summer of 1881?

A- Yes sir.

2- How long?

A- Well, I think it must have been to July. But I do not remember the exact date.

2- How long before the commencement of this suit?

A- Well we were done washing when we were enjoined. We were cleaning up.

2- A day or two before? A few days before?

A- I do not remember how long. We were cleaning up at the time.

2- You were done washing a few days before?

A- Yes sir.

2- You had been working there regular every year, during these several years past?

A- Yes sir.

2- How many months in the year did you work.

A- About five months on an average.

Q Now you testified that you used from eight to sixteen hundred inches?

A Yes, sir.

Q That was the average?

A Yes sir.

Q From eight hundred to sixteen hundred inches?

A Yes sir.

Q Did you make a report to Mr. Hall, the State Engineer, as to the amount of mine inches you used in that mine?

A I do not remember.

Q Don't you remember of the circumstance of having given such a report to Mr. Hall?

A No sir.

Q Don't you know that when that report was made, a conversation was had over there; to the effect that this was not to be used against you?

A I know it was not. I know that I never thought of anything of that kind. I don't remember of ever having any such conversation with Mr. Hall.

Q You do not remember of ever making any return to Mr. Hall of the number of mine inches used in that mine?

A - No sir.

Q - You have no recollection of it?

A - No sir.

Q - Did you not put the amount at a considerable over the amount you put it here to day?

A - I could not have done so, if I had taken the report from the books.

Q - Did'nt you put it regularly at fifteen hundred cubic inches. Per annum?

Mr. Byrne object. The witness states that he has no recollection of having made any such report.

Mr. Hart - Well I desire to ask him about it?

Mr. Belcher - If you have the report you can produce it.

Mr. Hart - I may produce the report afterwards.

Mr. Byrne - The witness has stated that he has no recollection of having made such a report. Now I say that after that answer, it is improper to follow it up with inquiries as to what the contents of such a report was, - when he has stated that he does not rem-

submit it. He has stated that he has no recollection of it.

Mr. Hart - I have a right to ask the witness whether he has previously stated different in regard to this matter, whether in a report or elsewhere. And then if he denies it, I may produce the report.

Mr. Byrne - If the object or intention is to impeach or contradict the witness by any statement in the report, the report must be shown to him at the time.

The Court - He may have the report to refresh his memory by. It may call to mind the circumstance of his having made it.

Mr. Byrne - Have you the report with you, Mr. Hart?

Mr. Hart - I have it not in my pocket now. But I will get it before the case is through? Did not you make a report in which you represented that the number of miners inches used per annum was fifteen hundred inches?

A I have no recollection as of any thing of the kind.

2. Now in speaking of the character of the material contained in the

Indiana Hill claim mine, do you mean to have it understood that it is the character of material, generally contained in this ridge that will be worked in the future, on this same ridge? The Gold Run ridge?

The witness - I do not understand you? You mean this material resemble me?

Q - Yes sir.

A - That is the same kind of material. I take it for granted that it is. Being from Indiana Hill.

Q - I mean Gold Hill ridge?

A - Indiana Hill forms a portion of Gold Hill ridge.

Q - Do you mean to say that this is the same kind of material that is taken in the Excelsior claim?

A - I do not know anything about the Excelsior claim. I have never been down on to the rock there that I am aware of.

Q - You spoke this morning of the number of inches that were flowing into a flame from a northern? I think that that was the Excelsior mine?

I am not certain?

A- Yes sir.

Q Now you state that contained about six hundred and twenty five inches? In that flume?

A- Yes sir. And that claim. The full amount that was run there, I think was some where about that amount.

Q Now sir what is the basis of your knowledge as to the number of miners' inches that were actually run there?

A I told you. Because the Gold Run Ditch and mining Company sold to Mr. Halsey this water. It ran through our pipes. The water that they used in their claim. With the exception of about twenty five to thirty inches which they bought of the Yuba company which was waste water. I know about the amount we sold. We sold him the water and charged him for it.

Q I will ask you now whether or not you measured the amount of water used by that company?

A- Yes sir.

Q Used from your mine?

A- Yes sir.

Q When did you measure it? I

mean the amount of water used by the Excelsior mine?

A The water that came to Mr. Halsey was measured every day.

Q Did you measure it?

A Yes sir,

Q When did you measure it?

A At different times

Q How?

A I would go along by the gauge box and see that the pressure was all right.

Q How often did you go there?

A Frequently. I always noticed it when I passed by.

Q How often?

A Perhaps a dozen times during the season.

Q A dozen times in the year?

A A dozen times during the five months.

Q Well, that would be a dozen times in the year? if it was a dozen times during the season?

A Yes sir.

Q Now your measurement consisted simply in going along to see whether the pressure was right?

A Yes sir.

2 Upon the gauge box?

A- Yes sir.

2 Do you know or do you remember whether you went by that gauge box on the seventh of June 1881?

✓ A- No sir. I don't remember anything about a particular ~~that~~^{date} date.

2 Do you know whether or not on the 17 of June 1881, 1100 inches of water was being used by that company? By that mine?

A- Yes sir. I know that could not have been used; not that much.

2 How do you know that on the 17 of June 1881, 1100 inches of water was not being used on that Excelsior mine?

A- Because the nozzles they ran their water through would not discharge any such amount of water.

2 Do you know that that was the fact on the 17 of June 1881?

A- They could not have used any more water than I told you.

2 How can you be sure that you know what nozzles they were using at that time?

A- Well, I know that they had our giant, and I know the size of the

nozzles that apply to it; and they would not discharge any such amount of water.

Q That was, on the 17th of June?

A Yes sir.

Q Did they have any other giant?

A No sir.

Q Or any other pipes?

A - No sir.

Q You know that they were using this giant?

A Yes sir.

Q Do you know they could not be using any other?

A No sir.

Q Do you know as a matter of fact that they were using your giant?

A Well, no sir, I presume they were.

Q Do you know of your own knowledge whether they were or not?

A - No sir.

Q Do you know whether they were using any other pipes or giants?

A I know they could not be, because there was no other in the ^{claim} country. ^{claim}

Q I want to know whether you know whether they were using any other?

I ask for an answer to that question? Not for any reasoning or argumentative answer? I asked you whether you know, whether at that time they were using any other giant or pipes?

A- I do not know of my own knowledge, of course.

2- Now then; when you testified then in your examination in chief that Mr. Allard had made a gross mistake, you were testifying from your inference, and not from any actual measurement made at that time? were you not?

A No sir. There was no other giant that was being used in that place.

2- I ask you if you were not then testifying from inference?

Mr. Byrne - We object to this examination.

The Court - He has answered the question.

Mr. Hart - I want an answer that is not argumentative.

The Court - He has a right to tell how he arrived at his answer.

Mr. Hart - I have a right first to require of him an answer to my question; as to whether he did

or did not at that time give testimony which was inferential, and not based on actual knowledge? and I ask him whether he knew of his own knowledge that Mr. Allard committed an error in testifying to the fact that 1100 inches of water were running on the 17th day of June through this flume or into this mine?

Mr. Byrne - I desire that the witness have an opportunity to answer the last question before another question is put to him,?

Mr. Hart - Read the question again Mr. Reporter.

The Court - certainly the witness ought to be allowed to answer one question before he ~~has~~ is called upon to answer another.

Mr. Hart - Read the question over.

The Reporter - Read.

Mr. Hart - Now I want to know whether you were answering from inference or from actual knowledge on this point?

A No sir. I answered you, that I knew there was no other giant in that ^{claim} County there at that time.

Mr. Hart - I want an answer to my question. It's a specific and categorical question. I want a categorical answer, as to whether you testify from knowledge or from inference? I think I have a right to a ~~direct~~ answer to that question.

Mr. Byrne - We think the witness has a right to answer a question of that kind in such form as he thinks will ^{make a} best reply to the counsel, according to his understanding of it. And has a right to state his source of knowledge. And I think the witness has fairly proceeded to answer the question. He made a reply, and was proceeding with ^{his} answer when he was interrupted by the Attorney General.

Mr. Hart - I asked him if he gave this testimony this morning from inference or from actual knowledge? The Court - Complete your answer, Mr. Gould, if you have not already done so.

Mr. Hart - He proceeded to reason out the matter.

The Court - He has a right to explain what he meant by his statement.

Mr. Hart - I understood that I have

a right to a direct reply to that question. He has already given a long explanation about the matter, and I think that when the question is asked me again, and the answer which the witness did make is also read, the court will sustain me in my view of the case.

The reporter re-read the question.

The witness - I say that there was no other giant used in that claim.

Q Do you know there was no other giant used there on that day?

A Not that I know of. For they used ours.

Q Do you mean to testify that on that day there was no other giant there used on that claim?

A. I don't see how there could have been.

Q I do not ask you whether there could have been or not? I ask you if you mean to testify that on that day there was no other giant used on that claim?

A No, I do not know that it

could testify to that

Q Now do you know, whether there was any water running over the banks on that day? Into that claim?

A On that day there might have been water running over.

Q I ask you whether you know there was any water running over the banks of that claim on the 17 day of June 1881, when Mr Allard made his measurements?

A No sir. I don't know whether there was or not.

Q Now then, when you charged Mr. Allard with having made a gross mistake, did you testify from actual knowledge as to that fact?

A I think it is from actual knowledge. For there was no other gage used there.

Q I asked you if there was any water running over ~~the~~ banks on that day? And you say you do not know?

A No sir.

Q Now do you mean to say there could not have been any

other giants used there on that claim on that day?

A. No sir.

2. Now I ask you whether or not you were testifying from actual knowledge when you said that Mr. Allord made a mistake in his measurement on that day?

The Court - He has said that he thinks so. That is using his own language; with ~~his~~ his own interpretation of language. You have got his opinion in regard to that. You have got his statement as to what he knew, and what he did not know of his own knowledge. You cannot compel him to use your language. According to his information, he was testifying from actual knowledge.

Mr. Hart - But I have shown that he did not have an actual knowledge of many of these facts.

The Court - Very well. If that is so, then that is in the record in connection with his statement of his opinion.

Mr. Hart - I do not wish, for any examination but what is right and legitimate, I disclaim any desire to undertake to move a witness. But

here is a case in which a witness has made an actual measurement. And the correctness of his measurement is absolutely denied by another witness who has made no measurement.

The Court - Well, he has told you what he did, and what he did not do. And he thinks that he spoke from actual knowledge. Now it is all in the record, and you have the benefit of it.

Mrs. Hart - They are seeking to contradict Mr. Allard here, by testimony from a witness who does not know anything ^{about} the measurements which

we have proved.

The Court - If that is so then you have shown it to be ^{such} [touching]. He has told you what he considered actual knowledge. Now you can not make him use your own language in regard to that matter.

Q I understood you to state the average dimensions of the washings in the ^{claim} tunnel to be 1600 feet wide by 1300 feet long and by 90 feet deep. Is that a fact? A The washings?

Q In your pit? A No sir. Q What did you state it to be? A I said that the top washings — we were referring to the top washings at that time.

Q What do you mean by "top washings"? A I mean the red gravel like these two samples Nos 2 + 3.

Q By whom were the top washings made? A Well by different parties before the Company had anything to do with it.

Q Is it not more than 1600 feet long? A The top washings are only approximated on my part. I never measured them exactly.

Q Does not the top washing

It bend the full length of the ridge? A It certainly does not on the Indiana Hill claim. I am speaking of the Indiana Hill Claim and of the top washings on the Indiana Hill claim but not on the whole ridge.

Q Now I want you to explain to me again, coming back to the subject exactly what it is in that that gives the color to the water that comes out of your claim? A Well I do not know. You can see it right there < pointing >. It comes out a bluish color similar to that chunk there.

Q Similar to this large chunk of clay.

Q Do you know what the constituent parts of that are? Do you know what its elements are? A I suppose it is gravel and some sand.

Q Do you know what it is that gives it this reddish

Color where it comes in contact with the air?

A No sir I do not claim to be a mineralogist

Q I will ask you whether or not it is not a fact that when that stuff is put into water it comes out with a bluish color as you state and afterwards when brought in contact with the air it becomes a yellow or reddish color? A I do not know that it does

Q Do you know that it does not? A No sir

Q Now your company commenced work in 1870 what work did it do between 1870 and 1875? A It extended the ditch to the Gule River the South fork

Q I mean in the way of washing. I would call your attention before I get to that though, to the operation of the water on that stuff. Do not that what it does

almost always <illustrating>

Q I think it would be the same if you did not put it into the water.

Q Is not that what it always does? You said it formed sand did you not? Now I asked you a while ago what you did in the way of washing between 1870 and 1875 and the Winters of 1876?

✓ A They were washing in several places on the ^{claims} plain emptying into Squares' Cañon

Q Where is that? A That is between Gold Run and Dutch Flat

Q What did you do on Indian Hill in the way of washing in 1875 and 1876? Between '70 and '76? A I think in 1874 the Winters of 1874 we ran on Indian Hill about one month if my recollection serves me right

Q What did you do in 1875

Q You are now speaking of the mines of 1874-75 or of 1875-76

Q 1874-75? A I cannot tell exactly but I think we were washing some on what is called the Gold Run claim

Q The Gold Run claim? A Yes, I think so

Q What kind of material were you washing there?

A It was a second stope of about 40 or 50 feet of blue gravel and red gravel about half and half I think

Q How extensive were those washings? A All the claim is I think about 800 feet probably

Q 800 feet in length?

A I think so

Q By what width?

✓ A On the length of the channel?

Q By what width?

A The width would probably

be perhaps a thousand feet
that was being washed
somewhere from 1872 to 1875

Q By your company? A It
was owned by the Cedar Creek
Company and the Golden Run
Ditch Mining Co. and each
company run their proportion
of water to wash it out

Q Did you wash the same
kind of gravel from any
of the other claims during
those years between 1870
and 1876? A I think we
did

What other one? A The
North Star.

Q How much did you wash
there? How deep? A I
think it was washed from
40 to 50 feet

Q And how long and how
wide? A Perhaps 1000 feet
or 800 feet I think in the
channel where we washed
and 600 or 800 feet wide

Q Well did you wash
any other claims in which

you washed the same kind
of gravel during those years?

A I cannot remember whether
in those years we washed
over what is called the
Taylor claim or not.

Q But you have done that?

A That has been done

Q By your company?

A Part of it by our company
and part before our Com-
pany bought the ground.

Q How deep was that washed
by your company? A I
should think 40 feet

Q How wide and how long?

A It is almost guess work
for me to say

Q You can make an
estimate? A Yes we are
speaking of our Company?

Q Yes this that is 40
feet deep? A I do not
really know. It does not
seem to be any use for
me to make a wild guess
at it. I cannot remember.
It is some time ago.

Q Did you wash any other mines there beside that? a not that emptied into Canon Creek

Q You washed some off on the Gold Run Mine too? a that is the one I spoke of

Q I mean the Indian claim
a no sir not on the second slope

Q Did you have your grants in at that time, using them from 1870 to 1875?

Mr Byrne a or you mean on the Indian title claim?

Mr Hunt on any of these claims. a yes I think they were in use then.

Q all the time? a I think so.

Q From 1870 up? a yes that is my recollection of it. Q what was your pressure? a where?

Q Any place there and in each place in that mine or those mines, that system

of mines on the Gold Run
Ridge? A I suppose 175
to 200 feet pressure

Q What was the size of
your grant? A You are
speaking now of 1872-1871

Q All the time? What was
the size of your grant in
1871 and 1872 there, if
you have had different
instruments? A I think
the rule was about 9 inches

Q How many cubic yards
per miner's inch did you
work out? A I do not know
as I never made any
estimate on that

Q Were you Supt of the
mine at that time - of the
Company? A I wish you
would explain which mine
you mean

Q I mean of the Gold Run
Mining Co. A The Gold
Run mine is owned by the
Cedar Company

Q I mean the Gold Run
Mining Co. A I am the

Supt of the Co but when you ask me about the Gold Run Mine —

Q I said the Gold Run Mining Company?

A Yes I was Supt of it

Q And you worked off all those mines that you have spoken of and have no idea as to the number of cubic yards you worked per miners' inch?

A Now you are speaking of the second stope

Q I am speaking of that portion that you worked off between 1870 and 1875?

A Some of those claims we did not own in 1870 or 1872

Q Those that you did own and work how many cubic yards did you work off for each miners' inch of water? A I never made any estimate of it

Q You never knew any thing of that? A I never

made any estimate

Q Can you make any estimate now? Ans,

Q How is it that you can make a better estimate of what you have done on the Indiana Steel claim than on any other mine that you had before 1875?

A Because I had an actual survey made of the pit

Q You had an actual survey of the pits? A Yes.

Q And by that means you can make your estimate? A I do not think I could survey that pit myself and make an estimate of it

Q You do not know any thing about it except from the survey? A That is the way I base my calculations

Q Do you know whether that survey was right or not? A I take it for granted it was right

Q Do you know? A I
only suppose

Q Your testimony is based
on the supposition that
what someone else told
you is true in that regard

A When I employ a surveyor
I suppose he knows his
business and does it correctly

Q Are you willing to swear
to his survey? A I do not
think it is necessary

Q Do you know how many
million cubic yards of
dirt you have thrown into
Canon Creek since 1870?

A I never have made
any estimate of the amount

Q Can you make any
estimate? A I do not
know that I could

Q State you throw at
least 50 millions in there

A I cannot make any
estimate Sir

Q Do you not know that
at least 50 millions have
been thrown in there by

your company alone.

A I should not suppose we have

Q I want to see if you can tell me just how far up your sample No. 1, extends in your mine.

A How far from the bed rock?

Q Yes from the bed rock

A I said before that this sample was taken 4 or 5 feet from the bed rock

Q How far up does that kind of material extend? A In places that is 10 feet deep perhaps more

Q 10 feet deep in places and perhaps more? What is its average depth from the bed rock? A Well I should think it would average 10 feet of that material on the bed rock

Q Does it all extend to the bed rock? A I like

this?

Q Yes. A I presume you will find places where it is not as firm as that.

Q Now that specimen is about the finest one you could find in the mine was it? A No sir I think there are plenty like that. There are acres of it there.

Q You could not have found any finer specimen like that if you had looked for it? A I would have to have hunted round to have found a softer one.

Q And liberally you brought down the softest specimen you could find?

A I brought what I thought was the average of the bottom gravel.

Q Did you pick it out yourself? A Yes. Q After you get above that I understand you to say it is not so firm? A Not as hard

It is not so firm as that
quite. Still the pipe
has no effect on it for
70 feet from the bed rock

Q What is it that shows
the distinguishing line between
this and the material above
it?

A It is very much
alike, there is very little
difference. It is the same
rock only near the bed
rock it seems to be cemented
harder that is all the dif-
ference I can see

Q After subjecting the
material immediately
above it to an explosion of
powder it does yield to
water does it not?

Yes

Q And very easily?

Ans Sir It is very
hard and a heavy
mass of stuff to wash
off after it is blasted

Q After it is blasted
you run off a couple
to 3 cubic yards to a

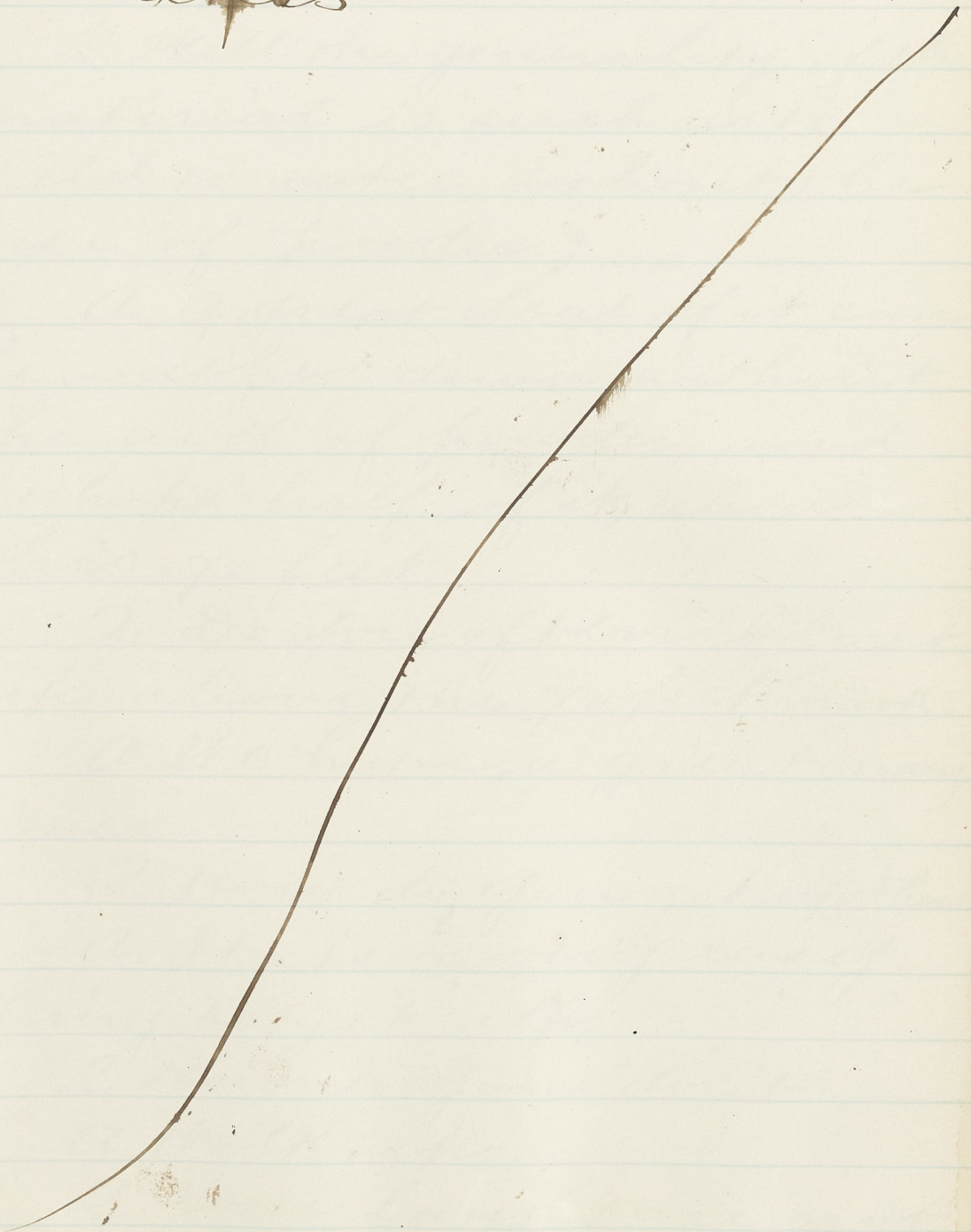
miners pick of water
 @ of this?

Oyes

a I presume taking
 this stuff we could not
 run off over two

@ not over two?

apes



Q. So that if it does yield to water after it has once been exploded by powder, then when you get 70 feet above, I understand, you do not have to use powder at all?

A. Sometimes—There are places, spots in it

Q. Will the generality of the material is such as to yield to water, without the use of powder?

A. A great deal of it can be washed down without the aid of powder, and perhaps half of it, above this 70 feet

Q. Do you often blast up above the 70 feet mark?

A. We have, a great many times

Q. How do you get up there

A. It is a very easy thing to get up

Q. How do you do it?

A. Walk up

Q. Your banks are not verticle then

A. It is a very easy thing to walk up a bank. It is often sloped.

Q. Carry powder up with you? A. Certainly. Sometimes put up a ladder, and carried it up

Q. And blasted after you got up there?

A. We put our powder in under the bank, and load the drifts, and explode them, four or five hundred kegs of powder

Q. At that distance from the ground? A. Yes sir, we have done it - put in 600 once

Q. That is all for the present, but I want to examine this witness again, after I get Mr Stall into Court

Re-direct Examination

J. L. Gould
Mr Byrne Who did you

day sold to Halsey, the water that he was using last June in the Ecelsior Claim?

A. The Gold Run Ditch and Mining Company, with the exception of 25 or 30 inches, brought from the South Yuba Canal Company.

Q. Did you see that 25 or 30 inches that were running over the bank?

A. Yes sir.

Q. Was there any more than that quantity running over the bank at that time? A. I cannot say as to that date, but I never knew of their being any more than that.

Q. Now, you were asked by the Attorney-General if you knew the quantity of water that was being actually used upon that claim upon that particular day.

Did you know the amount of water that was being used there, both before and after that day during that season

Objected to as not re-direct examination

Mr Byrne I want to arrive at his means of knowledge

The Court You can explain any matter alluded to, or cross-examination that apparently seems to need explanation

A. I do, I know the water that was used from our company through the season

2. Is it ^{at} all probable that there was 1100 inches of water used there on any one particular day

Objected to as incompetent, and leading

Mr Byrne Could any such quantity of water as 1100 inches have been used in that claim without

your knowing it at that time?
 Objected as incompetent,
 and as calling for the
 opinion of the witness.

The Court overrules the ex-
 ception, and plaintiff
 excepts

(Ex)

The question is repeated

A. No sir, for the very rea-
 son that the flume, carry-
 ing the water from the
 measuring bot to the
 sand bot would not carry
 any such amount, it
 would not have carried it-
 600 inches of water would
 have run the flume over,
 700 at the outside would
 run the flume over that
 conducts the water from
 the measuring bot to the
 sand bot

2. Did you state the
 size of the giant that they
 were using in that claim
 at that time?

A. I do not know the
 number of it

Q. Do you know the size?

A. It is what is called the second sized giant, I think

Q. Whose giant is that?

A. The Hoskins' giant

Q. Have you seen it often? A. Yes sir, It belongs to our company

Q. It did at one time belong to your company?

A. Yes sir

Q. How long has that specimen that you have produced there, been out of the ground - that hard piece - you called it No. 1, didn't you? A. Yes sir. I think that has been out about 5 or 6 weeks

Q. I believe you stated that after this material is exposed to the air, it decomposes somewhat?

A. It will slacken, after a very little

Q. State to the Court what the color of that material is

when it is first washed, as it appears in the original bank, when it is wet with water? A. It is blue. It colors the water blue - a bluish color

Q. It is what you call blue gravel? A. Yes sir.

Q. It is not blue now?

A. It changes a little

Q. You were asked about how much was realized per cubic yard from certain washings. Let me ask you if it is customary with miners to estimate the results of their property by the amount contained in each cubic yard?

A. Very seldom

Q. Have you ever done so?

A. No sir

Q. What do you call a cobble stone. - What size stone is a cobble stone?

A. Well, four or five inches diameter - for instance this is one here (referring)

2. The longest way or the shortest way?

A. There are small cobblestones and large cobblestones. I call this (referring) a cobble stone. It is a pretty large one, though

2. I believe you stated to the Attorney-General that at the time this injunction was served upon you, you were not washing?

A. No sir, we were cleaning up - done for the season

2. State to the Court about the work you were doing on the east rim, the extent of it, and how much remains of that lighter soft material yet to be washed?

A. There was a small point or ridge, the rock lying up high on the rim that had not been washed off by the first washing, and we concluded to wash that off before washing across the bed of the

channel, where our pipe lay, and we ran up there and washed it off

Q. What do you mean by the first washing?

A. I mean the red gravel

Q. By whom was that done? A. Several parties that washed it off years ago

Q. Was it done by the Gold Run Ditch and Mining Company? A. No sir

Q. It was done by your predecessors in interest?

A. Yes sir

Q. When you were estimating the depth of that blue gravel, in reply to Attorney-General Hart's question, from what point did you estimate the depth? A. At Indiana Hill

Q. About what point in the Indiana Hill Claim? You said it extended a certain distance—that it was a certain number

of feet high? A. Directly over the channel, and this, representing the pit

Q. Do you mean in the lowest part of the channel? A. Yes sir. the lowest portion

Q. Will you call the attention of the Court on that diagram to the place where this light gravel which you have just spoken of is situated?

A. This represents the light gravel, all through here, this represents the red gravel that was washed off in the former washings in the Gold Run District, and in the Indiana Hill Claim.

Q. Indicate there the deep pit, or the bottom washing

A. Right here, this blue line represents blue gravel, the blue margin

Q. What is the depth of that pit below the average

surface of the upper washing? A. You speak of the bed rock or the top of the blue?

Q. The depth of that pit from the ^{surface of the} old washing as marked by the blue line?

A. From the surface to the bed rock in the channel here, would be about 300 feet.

Q. And how deep below the upper washing - the original washing?

A. About 160 feet.

Q. You were asked by Mr Hart how much money you had divided, or how many dividends you had paid, and you said \$34,000 had been divided?

A. Yes sir.

Q. That is a dividend of \$34,000 had been paid?

A. Yes sir.

Q. Why is it that more money was not divided?

A. Because it was used in buying up mining

ground, building ditches, enlarging the ditch that they had, running tunnels, and improving their claims in the way of pipes, giants etc.

2. What do you say the present value of that property is?

A. It has cost about

Mr Cadwalader That is not what he asked you

Mr Byrnes State what it cost?

Mr Cadwalader He has already stated that once Mr Byrnes State its value in your opinion?

A. I should have to correct a little error that I made in my testimony this forenoon. I said that the property had cost \$503,000 I think I said. It is \$438,100. In doing this, I endeavored to estimate the amount of dividends for 11 years, and I added \$65,000 interest money to the cost

of the property, and I wish to deduct that off, and show what the property actually cost

2. Well, did you actually pay \$65,000 interest-money

A. Yes sir.

2. Why is not that a part of the cost of the property, then?

A. In buying up this property the Company ran themselves in debt; and had to pay interest to the amount of \$65,000

2. What is the present value of that property in your opinion?

A. I think it is worth ~~50000~~ \$50,000

2. What do you estimate the future profits arising from the working of that property to be.

Objected to as not re-examination, and objection sustained

3

Re: Cross-Examination

J. L. Gould

Mr. Hart: What's the capacity of the flume through which the water was carried to the Excelsior Mine?

A. About 46 inches wide

Q. Did you measure it?

A. It is a portion of a flume-

Q. Did you measure it?

A. Yes sir

Q. Where did you measure it? A. I measured it; a portion of it is ours, we know the width of the flume we put in. A portion of it belongs, a portion of this flume, and we know the width of the flume when it was put in

Q. How high is the flume, you say that is 46 inches wide, how high is the flume? A. Two feet

Q. That is 24 inches high? A. 22½ inches

high. It goes down an inch and a half on the bottom

Q. What grade has it, what fall? A. The lower portion of it 50 boxes, or 600 feet gives is 5 inches grade to the 12 feet

Q. What grade has the balance of it? A. The balance of it has 6-inch grade

Q. Now what part of it had the 5 inch grade?

A. The lower portion of it - 50 boxes, 600 feet has 5-inch grade

Mr Byrne Are you speaking of the Halscy flume?

A. No sir. I stated plainly the flume from the measuring box to the sand box, that means the upper end of the pipe, where the pipe goes into the sand box

Mr Hart I ask you whether or not now you have ever measured a flume through which was carried

the water to the Excelsior Mine? A. To the mine?

Q. Yes sir? A. That means to the upper end of the pipe, I suppose you have reference to - yes, we built it

Q. Now, what are its dimensions? A. That flume is 4 feet wide

Q. How high? A. The upper end is only 12 inches high, one board high, with a very light grade

Q. What grade? A. I do not know. It is very light; the grade was put in, so as to get it as high as possible

Q. Well, what is it?

A. I do not know sir, very near level

Q. Is it as much as 2 inches in 12 feet? A. No sir. That would be a very heavy grade for a flume to carry water. I say it is very nearly level

Q. What is the velocity of

the current? A I do not know

2. Can't you estimate it?

A No sir

2. Do you know anything about the velocity of water, and its operation by a quantity carried in a given channel?

A No sir, I do not

2. Now, if you do not know anything about that; and do not know the velocity of that water, how can you tell whether or not 600 inches would overrun the flume? A 700, I said

2. How can you state that? A. Because when we are running 530 inches, which is the largest head we ever run at that claim, it ran it full at the upper end

2. Where is that?

A At the upper end of the flume, it ran it full at the upper end

Q. I do not entirely understand you - you say you ran 500 inches into it at the upper end, and it ran it full? A. When we ran 530 inches it was very near all it would carry

Q. Very nearly, how much did it lack of being all?

A. I do not know exactly ~~to~~ how much it lacked?

Q. How much did it lack in inches at the top?

A. I do not remember the exact inches but I know it was very near full though

Q. Do you know whether or not, increasing the water in a flume, would increase the velocity of the water? A. I think it would

Q. Do you know to what extent? A. No, I do not

Q. Do you know whether or not one inch higher than the water was, at the time you supplied the 500 inches, would make

it carry twice as much as was then carried in it?

A. No sir, I do not know any such thing

2. Well, do you know anything about it?

A. No, I do not

2. How do you know it?

A. I know it from actual experience in running ditches one inch on top of that would not be anywhere near like twice as much, or half as much

2. Would it be half as much? A. No sir

2. How much would it add? A. It depends a good deal on the grade of the flume

2. How far does that flume extend which you say is 12 inches at the top? At the upper end?

A. Oh, I think there is probably 150 feet of it

2. Where does it commence

A. It commences at the sand box, or at the measuring

bot; as the water is measured it drops down, and goes into a flume, and that flume is carried on to what is called the sand bot, and when the sand bot is full, if you run any more, it will stay back and run over the flume, it will raise as high as the sand bot, and that will deaden the water in the flume

Q. What flume do you refer to as being 46 inches in width, and $22\frac{1}{2}$ in height? A. That is the flume that they run the gravel through from the claim

Q. What flume was it you said that overflowed with 700 inches?

A. The flume that conducted the water from the measuring bot to the sand bot?

Q. How far is the place

where that starts from the measuring bot - how far is it from that place to the mine, to the actual embankment, the point where they carry it to?

A. It is about between a half and three-quarters of a mile

Q. What do they conduct the water to the mine from after running over this distance that you speak of through which this flume runs, 12 inches in height and 4 feet in width?

A. It is conducted through a pipe from the sand bot to the mine

Q. Where is the sand bot?

A. On the hill. I stated that that flume was one foot high at the upper end. I want it understood, so that you would not think it was one foot high, the whole distance

Q. Why is it only one

foot high at the upper end? A. We thought that was sufficient to carry the height of the water

Q. How high is it, as you go farther down?

A. I think it is 2 boards high. As the water sets back from the sand bot, it flowed over very easily, if it got a little too full it flowed over the flume, if it was only one board high it would fill the sand bot

Q. This little giant that you speak of. When was that put in use by hydraulic miners?

A. Well, I am not positive on that; I think it was somewhere from perhaps 1868. to 1872. I cannot tell the exact time

Q. You say the giant they were using belonged to you? A. Yes sir

Q. How much do you

say your mine is worth?

A. You speak now of the whole property of the Gold Run Ditch and Mining Company?

Q. Yes sir? A. I consider it worth a half a million of dollars, if it can be worked

Q. Before asking you about that, whose evidence or judgment would be the best as to the amount of water actually in use in the Excelsior Mine, on the day mentioned, one who actually measured the water, or one who simply made his inferences, as you do?

A. I do not know sir. I do not think there would be much difference

Q. You do not know?

A. No sir

Q. Do you think you know about how much water was running

that day as you would have known if you had made the measurement?

A. I think I do

2. Now supposing that I should bring in witnesses here to prove that there was not over 200 inches running, would you contradict them?

A. I would go and look on the book of that date and see how much water was charged to them

2. And if you charged 300 inches, you would say that there were 300 inches instead of 200?

A. I would consider it pretty good proof that that amount of water was running

2. You are talking from your books, are you?

A. No, sir, I am talking of what I know of the amount of water that we ran to that claim

2. Ordinarily? A. Yes sir.

2. Your general knowledge or general judgment, based upon those facts, you think just as good as the judgment of a man who had actually made the measurement?

A. I believe I gave my reason, that there could not have been that amount of water run into that flume.

2. So, in giving your recollection, you leave out of view one proposition which you have failed to explain to me now, and I will ask you to explain it to me. Do you know whether or not there was water running over the banks of that stream at that time?

A. I cannot tell as to that date, sir.

2. Well, then you do not know how much of the

water was running into that claim at that time?

A At that particular day?

Q. Yes sir. A Yes sir, I think I do. I think if there was any run there, it was the amount I have stated

Q. How is that?

A. I think if there was any running that day, it was about the amount that I have stated

Q. You think so?

A I am satisfied of it, sir

Q. Well do you know?

A I know as well as a man can know

Q. Without knowing?

A Without seeing, and being right there, and looking at it

Q. Do you swear to anything you do not see or know {objected to} Now what is your mine assessed for? A. I believe the mine is assessed for

about \$90,000

Q. Who gave in the assessment? A. I have usually given it in

Q. Did you state its value in your list?

A. Well, the Assessor took it down, so much for each piece of property

Q. Did not you put that in your list? You gave him the value, did you not?

A. I believe so

Q. Did you not swear to that list?

A. I do not know whether I did or not

Q. Don't you know that you did swear to that list?

A. I do not remember as to that, sir

Q. You do not remember

A I presume I did

2. Now just refresh your recollection, and see if you do not remember, that you ~~never~~ did give in an assessment list in this State without swearing to it

Question objected to

2 How much did you say you paid for this mine? A You speak of the mines alone, or mines, tunnels, ditches, and ~~the~~ everything

2. The mines alone — \$400,000 you put it at?

A No sir

2. I speak of the mining property

The Court That was the price of the whole property?

A. I have down here the mines and the reservoir sites together, and one timber lot bought for blocks, for the use of the claim, \$203,085.

Q What was it that you paid \$436 000 for? A It was for the whole, the expense of building the ditches, building the extension, enlarging the lower ditch, running the tunnels and the improvements on the property, pipes, giants and the mining ground, timber land, reservoir sites and everything combined.

Q What did you pay for the land? A The reservoir sites?

Q No the mining ground
A I have to figure it up to tell. <referring> I can give you near the amount it is; the amount paid for the claims for timber land etc. was \$203 085; then out of that is the Summit Valley for purchase \$5000 and another near Cisco, the old town of Cisco was \$53033 and then there

was another small reservoir site that \$311 and then timber land to the amount of \$4000 for blocks, that comes out of the mining ground. The balance of it is mining ground some 18000 and odd.

Q Whom did you buy this property of? Various parties

Q Was there a man by the name of Kinder who was an owner in this property? A Yes sir

Q What has become of his ownership? A He has some of the stock now and disposed of some of it

Q In his own name?

<Question objected to>

Mr Hart I want to show that he bought half of the mine for \$60000 — answer the question A I did not understand the question

<Question repeated>

A Disposed of it in his own name

Q Has he any of the stock in his own name now at this time? A I think he has

Q How much did he dispose of? A I do not remember the exact amount

Q Who got the part that he disposed of?

< Question objected to >
Mr Badwalader Kinder owned half of the stock 2 or 3 years ago that would be half of the mine. He sold it to this gentleman for \$60,000. That is the proof

Mr Byrne that would have nothing to do with what the mine actually cost. We have simply undertaken to show and have proven what the mine cost

Mr Hart If objection is made I will not ask the question because I think

The testimony is irrelevant
on that subject

The Court go on

Mr. Hart You spoke in
your cross examination of
specimen No. 1. and in your
original cross examination
also you spoke of it
being exposed to the
air: how long is it
necessary for you to ex-
pose that specimen
to the air before it
dissolves or changes its
color and character?

A I think it will turn
a reddish color like
this < pointing > in one
season, on the outside
the same as this

Q But you spoke of
its changing its texture
and dissolving to
some extent when ex-
posed to the air?

A I said it would
flake some, very little

Q So what extent does that substance?

A Very little, what kind that ever I have seen

Q It will pluck so that rubbing against it that way will have a greater effect upon it than it does now — that is it will break up, would not it soon pluck it?

A It would take a long time

Q But it will do so?

A I presume it will

Q It changes its color from blue to red?

A A reddish cast like this here that you see
 <referring>

Mr Byrne That is all but we will have occasion to recall Mr Gould with reference to some patents and deeds. Mr Stark Q Is there water enough at your mines now to run it? A No.

Testimony of C. C. Wren

Called for a ft.

Sworn

Mr. Dyane What is your profession?
A. Surveyor and Civil Engineer,
Land Surveyor.

Q How long have you been
engaged in that business?

A Well, I have been engaged
in it for probably 25 years.

Q Look at that map behind
you and see if it is one that
you made? A Yes sir.

Q Will you describe to the
Court or explain to the Court
the meaning of the various
lines upon that map.

A These five black lines a-
round the names of the Claims
indicate the boundaries of the
Claims - This brown tinted line
around indicate the surface
washings. This blue shading here
indicates the pit spoken of
of the Gold Run Ditch and

Mining Co.

Q Upon what claim is that? A That is upon the Indiana Hill claim

Q So marked on the map

A Yes sir

Q I see that you have marked here "by Manual Excavation"

A Yes sir inside of this line

Q Inside of the yellow shaded line? A Yes

Q How did you arrive at those Excavations?

A Well, not by actual measurements, I did not meander the pit all around. I drew them from observation of what I had done in the mines surveying these different claims. I suppose there is no claim but what I have surveyed 2 or 3 times over, that is retracing the corners that had been washed out, tracing them down into the pit.

Q. How long have you practiced your profession at

Dutch Flat? A Ever since 1854 - not surveying

Q How far is that from Tooe Run? A About 3 miles $4\frac{1}{2}$ miles from this point, from Indiana Hill

Q With reference to the lines of the claims, these how did you arrive at them

A These claims were all surveyed separately I think in 1866.

Q By whom? A By myself for the purpose of compiling a map of the district. They were all surveyed separate

Q Did you accurately run the lines on all these claims?

A Yes sir

Q Did you have your field notes? A I have the field notes of all these claims.

Q Is that map made and those claims designated there from your survey?

A Yes sir

Q What does the blue line here indicate? A Cañon Creek

and these are streams that run down into it (referring)

I have you made an estimate of the amount of material, which has been washed from these surface excavations there which you call by hydraulic excavation? A From that sketch there I have measured it and made calculations from it

2. With what result?

A The area of the surface of it, washed, is 24.175.800 square feet

2. What is the average depth?

A The estimated depth 75 feet

2. That is average depth?

A That is the average estimated depth and in cubic yards is 67.155.000.

2 Do you know when that matter was washed away from that bench?

A Well, not all of it there is some washed, some portion of it a great many years ago

Q Do you know what position
A I do not

Q Have you made any other
Maps in connection with this case,
I will ask you if this is one
that you have made & dia-
gram showing?

A Yes, that is a cross-
section across the pit, across
the entire claim of the Bonanza
Mine, of the Indiana Hill
mine, sometimes called the
Bonanza Mine

Q That would be cross-section
just across there, would it
not (referring to Defot. Exhibit #1)

A Yes sir

Q Across the widest part?

A No sir, not exactly
the widest part, there are
some places wider, but about
as wide as any place in the
Indiana Hill Mine itself

Q Let me ask you what
that surface line is intended
to represent? A. The top
line is the old surface of the
ground. It is merely imaginary

Q. The original surface. Why did you put that depression there
 A. The ravine has run from this claim down into the river called the Indian Hill ravine.

Q. Do you remember seeing that?

A. I remember seeing it many times before it was washed out.

Q. Is a portion of that ravine still there? A. The lower portion.

Q. Now you say on your map there "Line of upper washing", what does it mean?

A. That means the line represented here, that brown line on the other map.

Q. When was that washed if you know? A. Well, it was about all washed before — I should say up till 1876 or 1877, all washed before that time.

Q. Do you know the time when the Gold Run Tunnel was completed?

A. I do not remember.

Q. Do you remember the fact of its completion?

A. Yes sir, I remember that, because I made the surveys for

tunnel.

Q Was that material above the Line of Upper Washing, 'marked' upon your map there, washed away before that tunnel was completed or afterwards?

A. Before

Q. Now you say that line of Blue cement. How high is that above the bed-rock?

A It is shown there to be 60 feet.
Q What is the character of material between the two lines, the line of blue cement, and the line of upper washing?

A Well, I have never paid a great deal of attention to it; it is softer than the lower portion. It is not cemented as below. The upper portion is a greyish color here - from the line of the upper washing to the blue gravel.

Q To the blue cement?

A The blue cement - it is all blue gravel or a bluish tint. from the line here of the washing.
Q. What character of material

Would you call this, No. 1?

A. That undoubtedly came from the bottom, close to it.

Q How much is there of this kind of material in the bottom of that pit? a Well sir, I could not say, I do not know. The sides are caved down, some of it from the upper surface caved down into the pit and on the East side I should judge that bank of cement was 60 or 70 feet high above the bed rock on the East side. On the other side I can not say anything about it. It is all covered over.

Q What is all covered over?

A The face of the bank by a cave from above.

Q I will ask you if this is a correct map of the cross-section.

A That is from actual survey.

Q It is correct is it?

A Yes sir.

The cross-section is marked off at Exhibit No 2

McAdams What was

the length of that?

A 1868 feet, it is shown on the map

Mr. Byrne. I will ask you to look at this map - This is Opt. Ex libris #3, explain to the Court what that is, who made it, and when?

A This map is made from the survey of the river, the North Fork of the American River. The map itself was made since I have been in the City.

Q The map was made from actual survey? A. From meanderings from Pickering's Bar down to Rees Bridge. I also took levels and measured the width of the river in 5 places.

Q From Rees Bridge to what point did you say?

A Pickering's Bar.

Q Where is that?

A. About a half a mile below Cañon Creek.

Q. Did you survey up to Cañon Creek? A Not at that time

Q Did you at any time?

A Yes. I surveyed a mining claim from the mouth of Canon Creek to that point several years ago.

Q Is that a correct map of the river? A. It shows the river. It is taken from a diagram of the surface.

Q You measured it I understand — you measured the width in 52 different places? A Yes sir.

Q What is average width of the river from Rice's Bridge up to the mouth of Canon Creek?

A I cannot give the average for the very reason that the distances were not taken equally.

Q Well, did you divide it into sections? A Yes, I divided it into sections.

Q I have you the result of your labors? A Yes sir.

(Paper produced)

Q Will you be kind enough to read it to the Court.

Mr. Cadwalader How many figures have you got there?

A. There are 52 different curves

and distances with the widths
and the cubic yards given.

Mr Byrne. We will put it in,
and let Mr. Uren state the totals.
I offer it in evidence. This is
a correct result of your labor.

A Yes sir, from the survey
Mr Hart. What does that con-
tain - It contains measure-
ments of width and length?

A Yes sir, and gives the course
down the river and the grade of
the river.

Mr Byrne. And the distances?

A Yes sir

Q And the grade? A Yes sir

Q Did you make any estimate
of the quantity of tailings now
in the river between the points
on that map? A I did

Q Does that statement show
the result of your estimate

A Yes sir, it gives the result

Q. State how many cubic yards
you estimate to be now in the
North Fork of the American
River between the mouth of
Cannon Creek and Rice's Bridge

A. Shall I state the different sections as I have it figured out? I have got it figured out at Warner Bridge at Stevens Bridge and at Rice's Bridge. These different points where my attention was particularly called to them.

Mr. Cadwalader you make the total 9,000,000? As you Mr. Dyne state the figures and state the sections?

A. From Rice's Bar to Warner Bridge the distance is 653.9 feet, the cubic yards 1,334.00 — The fall of the river between these points is 57.09 given the grade per mile 46.09. From Warner Bridge to Stevens Bridge distance 23.265 feet the cubic yards 6807.265, fall of the river 178 feet, making the grade 40.39 to the mile. From Stevens Bridge to Rice's Bridge a distance of 12.114 feet, cubic yards 1,220.276. The fall of the river 82 feet gives a grade per mile of 3.661 feet

Total distance from Rocker's Bar to Rees Bridge 41.918 feet
Cubic yards 9.361.691 and the
Fall of the river 319.119. The
Average fall is not given to that
point - That is it was only
given between the points.

Q. Have you any objection
to this Statement being put in
Mr Hart. We are willing that
it should go in as testimony,
and be copied into the Reporter's
notes, if he is willing to swear
to it.

Mr. Cadwalader We will receive
this as his statement and then
we will cross-examine him
on it.

Marked Defol. Exhibit # 4
Mr Hart. We do not understand
as is offered in evidence as a
document, but simply as a
portion of this testimony. If
that is to be offered in evidence
as evidence containing within
itself any intrinsic weight
we object to it. If it is to
be taken simply as this state-

ment here, taken down, we do not object to it

The Court. There is nothing in it except his swearing to it. It can not be any thing else possibly.

Mr Byrne. Did you ever make a survey of the excavation in the Indiana Hill mine

A. You mean the pit?

Q. Yes sir. A. I have I. With what result?

A. I can give you the result in detail, in different pits.

Q. Do that so that The Court can better understand it?

A. I have got six different pits here that I surveyed.

Pit No 1 which is the deep pit that shows down to the bed rock I have got 2. 895.000 cubic yards

Q. Explain to The Court where Pit No 1 is? A. Pit No 1 is this that is enclosed in the blue shaded. That is the bottom pit, marked bottom bench on Exhibit #1

I Proceed now, and as you go along state where they are

A. Pit #2 162.034 cubic
yards. Pit #3. 30.758. Pit
#4. 1.018, 586. Pit #5
66.983. Pit #6 216.430
Aggregate 4.389.791 cubic
yards.

I Now Explain to The Comt
Where these various pits are.
You described the first pit,
No 1, ?

A These pits outside of
Pit #1, one of them, and the
greatest one that I measured
is on the edge of it, and ac-
tually would be measured with
the same pit, by some, I think
it was by other Engineers. There
were two other pits, that are
directly East of it, and that
connect with each other.
There are still two other pits
that are north East from Pit
#1, that are measured separate.
They are all on the East side.

I find what time was this
washing. The contents of
which you have just given,
done, if you know

A I don't remember exactly the date. Since these pits have been washed, it is since the tunnel has been run.

Q It has been since the tunnel was run? A Yes sir.

Q Did you say that you did not know the date of completion of the tunnel?

A I do not remember it.

Q The washing that you describe has been since the tunnel was run?

A Yes sir.

Q Since it was completed?

A Since it is completed.

Q Now what is the character of material that was washed out of those various pits, the contents of which you have given. Just describe it to the Court?

A Well, I have never paid any particular attention to the character of the gravel itself. There is one of the pits in particular, was the upper washing the surface washing containing the 2,600,000 yards. The

other fiss outside of the deep pit were what I supposed what was called the second bench, the greatest portion of that; some of it I believe reached to the surface

Q What do you call the second bench? A I call the second bench what is immediately below the second washing or the upper washing

Q In what manner was the material removed from what you call the upper washing? A Well the greatest portion of it was run through what they call the Indiana Ravine but there was still more that was run into Indiana Creek through a little small ravine at the claim called the Bond Ravine at the time; it is not marked on the map

Q I will ask you if a

tunnel was necessary to work that upper bench

A They needed no tunnel for the upper bench

Q That was worked without a tunnel? A Yes mean the upper surface.

as the upper surface

Q The upper stratum.

A Yes sir

Q Have you made any estimate of the amount of material removed from the upper stratum there in the Gold Run District taking it from the Indiana Hill claim clear up to the railroad? A Separate?

not any measurement separate from the hole

Q Did you make an estimate of the entire quantity of the material removed by what you call the first washing in that district? A I did

Q What is the result of that? A The result is

given before, 67,155,000 cubic yards.

Q Is that all the washings on the hill? A That is all the upper washing

Q How did you arrive at that conclusion, by what method did you form your estimate?

Mr. Badwalader I have already stated from surveys that he had made there commencing in 1866

Q You mean the depth?

Mr. Byrne Q Yes sir the quantity. A Well, the quantity, of course the depth has a good deal to do with the quantity. The depth I arrived at merely by judgment, that is all, no other way to get at it.

Q Have you had considerable experience in mining and mining surveying?

A Well yes sir

Q In that neighborhood?

A Yes sir, a great deal

especially in that district
Mr. Badwalade, a Mining
 surveying.

Mr. Byrne and mining
 From your experience as
 a Surveyor and as a
 miner, can you form a
 pretty close estimate of
 the height and depth of
 banks and the quantity
 of material removed from
 excavations of that char-
 acter? A: If I was ac-
 quainted with the country
 before it had been washed
 of course I could get at
 it better than I could
 without knowing it.

Q Were you acquainted
 with that country before
 it was washed? A: I was.

Q In making your estimate
 did you take into consider-
 ation the knowledge that
 you had of the country
 before it was washed so
 as to arrive at a true
 estimate of the quantity

removed. Ayes sir that with my surveys and being on the ground so often as I am called there I suppose that I can judge it about as close as any body.

Q You say this is approximately a correct estimate of the quantity of ground removed?

A Approximately.

Q In reference to the quantity of material in the river how did you arrive at that conclusion?

A By measuring the length of the river and the width of the surface and I got the depths from parties - I measured the width at the end of every section in meandering the river. The depths I did not know anything about myself, I got it from parties that lived there; Mr Warner that lived at the bridge, he was with me

through the survey
Mr Start Q You took that
 from him did you?

A I took that from him
 and from others that lived
 there

Mr Start I move to strike
 that out as being hearsay
 and incompetent

Mr Byrne Let me ask
 another question before
 the Court rules on that -
 did you in making these
 estimates rely upon your
 own judgment and obser-
 vation at all or did you
 depend entirely upon
 what Warner and others
 told you?

<Objected to as leading>

Q Now what sources of
 information did you
 arrive at the conclusion
 which you have stated in
 regard to the depth of the
 river? A Well from the
 parties that are most ac-
 quainted with the river

that have lived there and known the depths. I questioned them in the matter all the time. I am acquainted with the river considerably myself. I have crossed it in several places a great many times, have seen its filling but of course I could not arrive at the depth myself, I did not pretend to know.

Q How often have you seen the river in the last 10 years? A I guess fifty times.

Q How often have you been up and down it within that time? A I was never up and down it other than from Warner's Bridge and Cañon Creek but two or three times in my life, that was the only place I was up and down the river except on this side of the river, the trail leading

from Stephens Bridge to
Iowa Hill

Q How often have you
been over that trail?

A I have been over that,
it is called the Stephens
trail from Colfax to Iowa
Hill

Q What point is that?

A It is about two miles
I believe above Rice's bridge.
The distance is given here.

(No. 1.7

Q How long have you been
acquainted with that
portion of the river, when
^{did} you first see it? A I
have seen the river as
early as 1856 the first
time, that is up in that
portion of the country

Q How many times have
you been over it and
crossed it say since 1876?

A Oh I have been over
it probably 8 or 10 times
every summer

Q Now sir from your

knowledge and observation of the condition of that stream could you or could you not form some reasonable estimate of the amount of railings that are now in it?

Mr. Sturtevant the object to that question on the ground that it is leading

The Court I will overrule the objection, Note an exception by plaintiffs

Ex

The Witness I suppose that I could form some estimate of the depth of water in a river but where there were others that knew almost the exact depth I did not rely on my own judgment. I took the judgment of those that lived on the river

Q Do you know the condition of the North fork of the American river below Rice's bridge?

The Court There is a motion

to strike out the testimony
Mr Byrne It is suggested
 that we have other witnesses
 who can of their own
 knowledge confirm the
 statement of Mr Wren, and
 if we by other testimony
 confirm his estimate and
 statement, I suppose then
 that this testimony would
 remain in. Otherwise it
 would simply create the
 necessity of recalling him

The Court I suppose if
 you call the witnesses
 from whom he received
 the information

Mr Byrne My understanding
 of the matter is that if we
 fail to supply that in-
 formation then the testi-
 mony will go out

Mr Caldwell It must
 go out now

Mr Byrne Then we will
 recall him

Mr Stark This order can
 be vacated if this testimony

becomes competent

The Court Very well

Mr Byrne Q Do you know the course of the North fork of the American river below Rice's bridge? A Immediately below Rice's Bridge? — between there and what is known as Shirt-tail Cañon I know nothing about any more than I know that there is a cañon below Rice's bridge and I did walk from Shirt tail Cañon to the North fork bridge down the river and looked at it — I walked down to Lyons Bridge or down to the North fork bridge

Q How far is that? A I judge it to be 16 miles. I did not measure it

Q What is the condition of the river below Rice's bridge the first 2 or 3 miles? A I was never onto it, I do not know

Q From what point on the

river did you go down?

A Shirt-tail Cañon

Q How far is that below Rice's Bridge? A I think 5 miles — 5 or 6

Q Into how many sections did you divide your survey of the river? A I did not survey that part of the river to make any instrument survey

Q I mean above Rice's bridge
A I saw 51 sections

Q Did you take the levels all the way? A I did

Q At what distances apart?

Mr Cadwalader Your map shows
A No the map does not show it

Q The paper shows?

A The paper shows the distances

Mr Byrnes Q What is the grade of the river for the first mile above Rice's bridge as compared with the rest of the river?

A The river has got a less

grade the further you go down from Canon Creek

Q Do you remember what the grade is the first mile above Rice's bridge? A I do not remember the grade for the first mile

Q Well the first course a the first section next above Rice's bridge the difference of levels is $9\frac{3}{10}$ feet and the distance 1780 feet

Q How much would that be to the mile? A About a little over 24 feet to the mile

Q Is that more or less than the grade of the river above that point?

A That is considerably less than the grade of the river on the tailings or on the accumulations.

The Court You will recall the witness against Mr Byrne Yes sir.

Cross Examination of E. C. Uren.

Mr. Cadwalader - Do you know Mr. Grunskey A- I do, Sir, I have met him here in the city, that is all.

Q- Did you compare your survey with his. A- I did not compare my survey with his. I think he did compare his with mine. I think he compared his with mine. I did not see his survey

Q- How did they come out, first as to distance. A- You mean on the river, ?

Q- Yes. A- We did not compare any on the river at all.

Q- I mean as to distance on the river

A- I do not remember what his distance was on the river

Q- I mean how did it compare with yours as to distance A- I do not remember the distance he made, that he testified to
Q- How did it compare as to width

Mr. Byrne I object that this is not proper Cross Examination
The Court What is the object

of this -

Mr. Harb I want to show
that there is no conflict
except that one of them
made the River shorter
and not as broad -
Mr Cadwalader. And this
is one way of testing the
accuracy of the witness
and of testing his skill
as a Surveyor -

The Court. State to him
Mr Granskys figures if
you have them a - I
did not compare it with
Mr. Granskys map -

Mr Cadwalader We had
been informed that he
made a comparison
and if by such comparison
they agreed there would be
a resting place for
both parties -

The Court - I do not see
how this Evidence could
be introduced unless
it can be shown that
the witness made a

Statements different from what he has made here. The objection will be sustained Mr Cadwalader I will have to commence then at the other end { To Witness }

What is the reason you did not survey from the mouth of Canyon Creek down to Pickering's bar?

A - For the reason that there were no accumulations there of any amount, not worth going over it for.

Q - And they told you to let it alone A - I do not know that they told me to let it alone - It was not worth while surveying -

Q - Who told you it was not worth while to take in that section of the River A - I do not know but what I advised it myself - I think I did

Q - Was not that the section of the River that had remained

These Sixty seven million five hundred thousand yards of tailings from Canyon Creek

A - Yes

Q - And yet you say in that section of the River from the mouth of Canyon Creek down to Pickering's bar you found no deposits of tailings worth surveying

A - Do you put that as a question?

Q - Yes. Read the question Mr Reporter.

{Question Read} A - From the mouth of Canyon Creek to Pickering's bar the grade of the River -

Q - Answer my question first A - How shall I answer it -

Q - Yes or No. A - I do not understand it.

{Question read again} A - Yes I say that -

Q - What is the distance from Canyon Creek to Pickering's bar A - About

half a mile -

Q - What is the grade of the River. A - I never leveled it

Q - Why did you not level it.

A - For the very reason that I did not go up there to commence. I commenced to work at Pickering's bar.

Q - Did you receive any instructions not to level it. A - No Sir. The bed rock

was bare in places and it showed no accumulations

Q - You swear that you received no instructions - objected to -

Q - (Adding) to make any survey of that section of the river. A - I do not believe I did have any instructions not to survey that part of the River.

Q - What is the distance from Pickering's bar to the end of your first course. Do you know

without reference to your book. A - No Sir. I do

not know. I will have

to refer to the Book.

[Referring.] The distance is Four Hundred and fifty feet.

Q— Do you know any of these distances without referring to your book A— No Sir. I do not think I could remember any—

Q— Do you know any of the Courses without reference to the book A— I know one course. That was Magnetic South. That is the only one I remember of the whole lot. Outside of the Book

Q— Do you know any of the Surface widths without reference to the book. A— I do not know that I do

Q— Do you recollect any of the average widths without reference to your books. A— I do not—

Q— Do you recollect how many courses you run before you came down to Warner's Bridge

A— I think Twelve I am

not certain -

Q - How long were you engaged in running from Pickering's bar to Rice's Bridge A - Two days -

Q - Two days A - Yes

Q - How many measurements did you make of the River during those two days?

A - Fifty one

Q - Of the width of the River from Pickering's Bar to Warner's Bridge A - I measured the width of the River at Every Station -

Q Do you mean from Pickering's bar to Warner's Bridge? A - I cannot remember to State positively without looking at my notes Mr Byrne You have a right to look at your notes if you see fit - Look at your Book if you desire

A - Twelve measurements

Q - How did you arrive at the average width of the River between those two

point? A - I did not arrive at the exact average width
 Q You guessed at that did you not? A - No sir I did not guess at that at all. I do not guess at anything in my Surveying -

Q - How did you arrive at that then? A - What are called average widths are the mean widths -

Q - Just Explain the process

A - Well in getting the mean widths I took the width of the preceding course of the Section - The upper part of the Section and the lower part and I took the mean between them and then I took the base of the angle or the angle of the hill, or the Slope of the hill into the River

Q - How many times did you do that A - At every Station -

Q - But I mean between Pickering's bar and

Warner's Bridge A - Twelve times I have got it here
 Q - I will ask you if as a general thing whether your estimate of the surface width was not an approximation represented generally by a round figure or the figure five A - I do not understand the question -

Q - I mean in arriving at the surface width of the River whether as a general thing you did not fix it at a round figure or the figure five - That is a figure ending with an naught or a figure five A - No Sir - The measurements were made with a Tape line and were made by my own chain man who works for me all the time. He directed the measurements and took the end of the line
 Q - Did you cross the River
 A - Yes -
 Q - Each time? A - The parties that measured crossed the

River at Every Measurement
 Q- Did you do the measuring
 or some one else A- My
 son and Mr. Price done the
 measuring -

Q- What Mr Price - A- Mr
 Price from Gold Run.

Q- And they gave you the
 measurements A- Yes -

Q- You did not take them
 Yourself A- I did not
 measure myself -

Q- In getting the average
 widths who got them for you

A- Who did it for me?

Q- Yes, A- I did it myself.
 That was done in the Office,
 not on the River -

Q- That was done afterwards,
 in the Office A- Yes

Q- How in regard to the
 measurements taken between
 Warners Bridge and Stevens
 Bridge A- They were all
 done the same way -

Q- You did not take
 any of them A- No Sir.

Q- Who Estimated the

Average width of the River?

A - I did -

Q How would you get at the Average width of the River. What objects would you run to on the shore

A - I did not make the Average width on the Surface at all. I took the widths of the Surface and averaged them by adding each end of the Section together -

Q Where did your Surface lines end A - They ended at the upper surface of the accumulations or at the water if the water was on that side -

Q - That is you measured the plane of the bed of the River A - Yes -

Q - Did you find it very even A - Generally it was very even -

Q - Generally very even

A - Yes -

Q - And you measured that from end to end - A - From

The beginning -

Q {Intg} From bank to bank

A From bank to bank

Q - How did get at the bottom width, the width of the 1849 bed A - I got at the width of the bottom by the depth of the angle or slope of the bank -

Q - How did you know about the slope of the bank where the filling was fifty feet deep A - I had to guess it -

Q - Guess at it? A - Yes. I could tell something about what was above the surface sometimes and sometimes I could not -

Q - Is not that a very unsafe practice for an Engineer in your experience - A - It is unsafe but I do not know any other way to get at it where it is covered up -

Q - It has to be a guess after all - A - I think so to a great extent -

Q- And it is a guess over a very hard surface or over a very hard substance is it not? A- I have noticed that there has been a great deal of guessing here anyway -

Q- And you thought you would take a hand in it. A I have got to when it goes to getting under the surface of the River. I cannot get at it any other way -

Q- You have been what is called a mining Surveyor A- Yes -

Q- That has called upon you to do a great deal of guessing A- I guess not -

Q- You will keep on guessing -

A- (Intg) I never guess in that business Sir because where I can measure I never guess -

Q- Here you found it impossible to measure A- Yes

Q- You could have measured if you had taken time enough

A- I could have sunk a

Shaff down I suppose -

Q - How why did you not stop at Stevens Bridge when you came down there A. Because I had instructions to go to Pices Bridge -

Q - Where were your instructions to start from A - From where I could find an accumulation in the River below Canyon Creek -

Q - They did not tell you then to start from Pickering's Bar A - No Sir -

Q - Whom did you get your instructions from A - from Mr. Smith -

Q - Who is Mr. Smith?

A - Mr Hamilton Smith -

Q - Do you know the grade of the River from Warners Bridge to Stevens Bridge A - Yes -

Q - What is it? A I will have to refer to my notes {Referring} The grade is One hundred and Seventy Eight feet -

Q - In what distance A - Twenty Three Thousand Two hundred and Sixty five feet -

Q - That would be nearly five miles - four miles and a half. Was the grade equal through that section A - The grade was not equal as I took it for the reason that sometimes when I took my levels I would be on a bar and at other places down almost on a level with the water -

Q - What did you say the grade was from Pickering's Bar to Rices Bridge A - One hundred and Seventy Eight feet -

Q - I mean from the mouth of Canyon Creek to Pickering's Bar. A - I do not know.

Q - What was the grade from Pickering's Bar to Rices Bridge per mile as compared with the grade from Warners Bridge to Stevens Bridge A - It is heavier -

The grade from Pickeringo Bar to Warners Bridge is forty six feet to the mile and from Warners Bridge to Stevens Bridge it is forty and thirty nine one hundredths to the mile -

Q - Now what do you suppose the grade is from the mouth of Canyon Creek down to Pickeringo Bar A - I think it is considerably greater than any other portion -

Q - What would you put it at A - I do not know that I could put it ^{at} any figure -

Q - Would you put it at over fifty feet A - Probably it would be over fifty feet per mile -

Q - How much more?

A - I do not know how much more it would be about fifty feet but make it fifty five to make a figure of it -

Q - That would be the maximum A - That would

be the maximum between Canyon Creek and Rice's Bridge
 Q - What would be the minimum in your estimation? A - Well it would be -

Q (Intg) I mean from Canyon Creek to Pickering's Bar

A - I could not state -

Q - Well about A - Well there are some places where it is a good deal flatter than at others. I do not know what it would be -

Q - Give us some idea

A - Probably there might be some places where it would not be over thirty feet in a mile - Short distance

Q - That is from the mouth of Canyon Creek to Pickering's Bar A - Yes.

Possibly it would not be over thirty feet -

Q - What is the width comparatively speaking between Canyon Creek and Pickering's Bar as compared with the width of the River

From Pickering's Bar down to Warner's Bridge A-I never measured it except at two points. I measured it by triangulation at the time I made a survey of mining claims. The water was high and I could not cross the river. At those points it was less than it was further down -

Q. - About what would be the average width A-I could not state what the average width would be

Q. - You say you surveyed for some mining claims and have been over it many times A. - I surveyed the Banks. The Banks are sometimes a considerable distance from the River probably two hundred or three hundred feet -

Q. - Give us some Idea A. - Probably one hundred feet would be wide enough for it -

Q - One Hundred feet - Would it be wider than that?

A - At some points but it would not average that I do not think -

Q - Where the grade was reduced down to thirty feet how wide would it be there A - I could not give you any estimate. I did not examine it. I do not know as there is any point that is so little as thirty feet. You wish me to guess something about this matter and I told you what I thought

Q - You said the minimum grade there was thirty feet. A - There is one place there that is flat compared with the balance of it -

Q - How wide was the bed A - I do not know

Q - Well how wide do you think it would be

A - I do not know that

I can tell - It might be one hundred feet and might be two hundred -

Q - How long were you in going from Warners Bridge to Stevens Bridge A - Well Sir we stopped over night at Warners Bridge after we had passed down the River a mile or more below. Of course from Warners Bridge to Stevens Bridge would embrace part of both days -

Q How long were you in going from Warners Bridge to Stevens Bridge - A - You mean after we had stopped over night there?

Q - Take the whole time from Pickering's Bar to Stevens Bridge A - We were two days engaged in the Survey -

Q - Only two days A - That is all -

Q - In going from Pickering's Bar to Stevens Bridge A - We did not do that the first day

Q - What was the time that you were engaged in Surveying from Pickering's Bar to Rice's Bridge A - I think probably about three hours -

Mr. Byrne Did you understand that question A - We did not commence until about at noon - We got down on the River and in the Evening we had got about a mile below Barnes Bridge and we went back and stopped over night and the next morning we commenced early and we got down to Rice's Bridge I think some where about five o'clock between four and five -

Q - That makes about a day and a half does it not A - Of actual work yes

Q Of actual work A - Yes

Q What is the total distance

A - The total distance is a little less than eight miles -

Access until Tuesday Dec 13th 1881 at 9:30 AM

In the Superior Court
of the State of California
in and for the County of
Sacramento

The People of the State of California vs.	} Morning Session Tuesday Decr. 13 th 1881
The Gold Run Ditch and Mining Company	

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Winfield J. Davis
Official Reporter

In the Superior Court of the
State of California in and for
the County of Sacramento

The People of the
State of California
vs.

The Gold Run Ditch
and Mining Company.

Tuesday
Decr 13th 1881

Morning Session

Cross Examination

of
E. C. Wren

<Continued>

Mr. Badwalade, Q In looking
over your table here I notice
in some instances that
the mean width is greater
than the surface width
Ayes sir

Q For instance; in one
instance, the mean or the
surface width, rather is
245 feet, while the mean

width is 206 feet? In another instance the surface is given as 223 feet and the mean width as 166 feet? Just explain that?

A It is owing to taking the preceding surface measurements and adding that to the next, taking the mean from that all the way through.

Q Well that simply makes an approximation?

A I don't know. You take the mean width by taking the extreme all the time.

Q That makes it simply an approximation?

A It is an approximation certainly to a certain extent. To a certain extent it is all an approximation, — in measuring what you cannot get at in the bottom.

Of course, if we measured the distances equally it would be truer. But the distances are not equal.

Q Did you have anything besides a chain and compass? A I had a transit, A levelling instrument

Q I believe you say that you had two men with you? A I had four men with me

Q What four men? A My son, and Mr Price, and Mr Gould and Mr Warner

Q Well I mean your surveying party? A Three besides myself in the surveying party

Q Who were they? A My sons and Mr Gould and Mr Price

Q How ran down the bank? A down one bank. A No sir we ran down the river

Q You ran down through the river? A Yes sir

Q What part of the river?

A Sometimes on one side and sometimes on the other and sometimes in the centre

Q How did you get the shore line on each side?

A By measuring across

Q At what intervals did you cross in those 9 miles?

A We crossed at right angles

Q I am not asking you that. I mean at what intervals in the 9 miles? About a quarter of a mile apart? A No sir. In some instances it was not more than 400 feet. I believe the longest interval was 1780 feet

Q Well 51 times at 400 feet apart would be 20000 feet? And your whole line is only 45000 feet?

A Well, you look at the distances there. They will give you the distances all through

Q Well your line is 45000 feet or 9 miles? A Yes sir

Q 51 crossings would make it nearly 900 feet for the

Crossings? A They will average that much apart I suppose. I see there is one distance that is only 393 feet and another one only 343 feet and there are two distances marked as 243 feet and 245 feet respectively

O Well that is all the information I want on that point. Do you know more about the 1876 surface of that pit than Mergould? Do you know more of what is called the Gold Run pit than Mergould did on the 1876 surface? A I suppose I did

A Were you working that claim then

A Do you mean this surface here? < pointing on map >

O No sir. I mean the 1876 surface of what is called the Gold Run claim

The Witness I don't know
what you mean

Mr Byrne If you will
call that the Indiana Hill
claim the witness will
understand you better

Mr Leadwelder Well I
notice that in this paper
you make an estimate
of the area of what you
call the Bonanza claim,
for the last six years.

And you foot up 4,789,791
cubic yards I believe?

Now I ask you, if you
refer to the Indiana Hill
claim? Ayes sir

Q The Indiana Hill
claim and the Bonanza
then are the same to you?

Ayes sir

Q Do you know more
about the 1875 and '76
surveys of that pit
than Mr Gould?

A I don't think I do

Q If Mr Gould had
pointed out to you the

surface of that pit in 1875 and 1876, and you had made a survey of all below it in the excavation, would you not naturally think that that was more satisfactory than any other way of testing or arriving at what the 1875 or 1876 surface was?

A I don't understand your question

Mr Belcher Let the Reporter read the question

Mr Caldwell Well I won't press that because you have already answered it in substance. Where did you get your initial point? Where did you get your initial point in that survey? Of course it was in the air

A In my survey of the pit do you mean?

Mr Caldwell No Sir. Where did you start your surveys of the line of

that pit? A I started
in the bottom of the pit

Q you started in the
bottom of the pit? A yes sir

Q What depth did you
estimate it to be? A I es-
timated it to be 180 feet.

The extreme depth of the
second bench. I estimated
that from the survey I
made before the shaft
was made

Mr Cadwalader Never
mind that

Mr Byrne Let him go on
and state

Mr Cadwalader Where did
you find that 180 feet?
at what point? Just
place your finger there.

A It is above the shaft
immediately above the shaft.
The shaft is not marked
here I think, but the shaft
is marked on the diagram

Q Just put your finger
where it is A Some
where about the (pointing)

on the line of the tunnel

Q You estimate it 180 feet there. A Yes sir.

Q To the 1875 and 1876 surface? A Yes sir.

Q Well where did you estimate the surface? At the north or south end of that line? A I ran the line from the bottom up.

Q That is not what I ask you. A That is the only way I can put it.

Q That is not what I ask you. Take the north and south ends of that same line, and give me the point, if you can, that you have taken for the surface. A The surface of that pit was very nearly even before that pit was made.

Q That is not what I ask you. <coming up to map> Just put your finger again along the 180 feet, where you started the 180 feet from

Q It was from the bedrock
 O In the centre? A Yes sir

Q What did you estimate
 the surface to be there and
 there at the North and
 South end? A The North
 and South end sloped
 up; the slopes are taken
 in the survey

Q I did not ask you
 that. I ask you whether
 you made any estimate
 there at all? A I made
 measurements and estimated
 from the measurements

Q I want to get at where
 you set your surface

A I started from the
 bottom and assumed
 that 180 feet from the bottom

Q Was it nothing at
 those two points? A It came
 up to nothing at each end
 and all around the pit.
 It came out all around
 the pit at nothing

Q Well how did you run
 that line across?

A Drain is lengthwise of
the pit

Q As on a plane? A Yes
On a plane as far as it
was level. And where it
was not level we took
the difference

Q You ran from nothing
to nothing and took 180
feet in the centre? A Yes.

Q How did you measure
the pit either way?

A By cross sections

Q How did you measure
it through here? <pointing>

A By my cross lines
that I ran through the
centre

Q You think that was a
plane - surface there?
That was not a plane
surface was it? A It was
for a short distance. It
might be a little sloping
The angle of the figure
<showing> was taken
out at each cross section
survey

Q Do you know as well as Mr Ford how much of that surface had been washed off up to 1876?

A I presume so. I have surveyed it several times. Q Were you there at that point in 1876? A I was there before and I suppose I was there nearly ever 7 years.

Q You didn't live at Ford Run? A No sir at Dutch Flat.

Q Have you any recollection of taking a cross section there about the time the tunnel was made? or about the time the tunnel was completed? A I remember of running the levels for finding what distances we should raise up.

Q That is not what I asked you. A I don't remember taking any other cross sections.

Q How much is the raise in that tunnel? That is from the bottom of the pit?

The Witness How deep is it down to the tunnel?

Mr. Caldwell Yes sir

A I think it is somewhere about 80 feet I don't remember exactly

Q All the stuff washed in that pit falls that distance down there?

A Yes sir

Q Well would that have the effect of breaking it up? A To a certain extent there is some kind of air that will break up easily by falling that distance

Q Will not almost all of it break up by falling that drop? That depth?

A It does not all fall that distance. Some runs down an incline. I don't know but both shafts are in the incline there <pointing>

Q Do you find in the bed of the American River between the mouth of Cañon Creek and Putnam's Bar any of that material?

A I did not go down it between those two points.

Q Did you ever find any of that material there?

A I was not along there. I was never down there. I don't know what lies between those points. I never saw anything of that kind there to my knowledge.

Q This is No. 1.? In getting at the contents of this pit I will ask you how far you started below the surface.

The Witness You mean the upper surface.

Mr. Caldwell Yes sir, the original surface
a I think 300 feet.

Q On an average?

A Well an average from that bottom, of course

Q That is, you estimate that there were 300 feet of surface washed off? Upon what you establish as your ideal surface? In order to get at the contents of the pit washed out since 1875 and 1876? A There were 300 feet I guess, or more.

Q Show much of the natural surface above your ideal line, representing the surface of the pit?

A About 140 feet, I think the surface was above the second bench on an average about that.

Q Well, did you base your estimate of this 4,300,000 cubic yards on your ideal line: starting 140 feet below the original surface?

A From 180 feet above the bed rock.

Q 180 or 80? A Above the bottom of the pit.

Q And how far or how much would that make the original surface?

A About 200 feet.

Q 180 feet? A Well the original surface was not even. There was a runne along there.

Q Well, there is nothing even up there is there?

A I don't suppose so.

Q Everything is uneven up there? A Well some things are even.

Q You don't find any thing very even on those mountains. A Not in the surface of the ground.

Q Do you know how much the Gold Run Co. represented in this case, washed from the surface of that pit the year before they completed their tunnel?

A I do not.

Q Do you know what they washed out the year before that? A I do not.

Q Do you know the kind of material they washed out? Did they wash off all the surface of that pit?

A I don't think they washed the surface of that pit at all.

Q Do you know that they did not? And sir

Q You don't know whether they did or did not? And sir

Q How was the surface of that pit washed off? Was it washed into Cañon Creek? And sir. It was washed into the American River, most of it.

Q Through what ravines? A Through the Indiana ravine. There was a little of it that was washed into Cañon Creek, through the Bourne Ravine.

Q How was it washed? Through cuttings? A Through open cuts.

Q Did these open cuts

run across that run rock?
 A One did

Q Where was that?

A It was somewhere near
 the line of the tunnel
 < pumping >? About here.
 Where that pit is represented
 there

Q Where is that cut run
 run out of which the
 mining company washed
 between 1870 and the com-
 pletion of their tunnel?

A I don't know particularly
 I know they washed the
 North Star claim some

Q What other claim?

Did they wash the
 Gold Hill claim? the
 Gold Run claim?

A I don't know. The
 Gold Run was worked by
 two Companies

Q When did they com-
 mence to wash on the

Bonanza? A I don't know

Q You don't know? A No sir

Q Do you know how much

red earth they washed off?

A In those measurements that I made, I know.

Q There is no red earth that they washed?

A Yes sir they washed some red earth there last year.

Q In your estimate of this 4,300,000 how many yards of red earth did you include in that?

A 216 000 and something.

Q From which side did that come? A From the East side.

Q That would be the side nearest the railroad?

A The side nearest Canon Creek.

Q You have not charged them with washing any red earth in the other side? A There was six different pits made. I believe there is some little surface, upper

surface there that was washed out in one of the North East pits.

Q Mr Gould stated yesterday, that in the extent, the whole extent, the bottom of that pit was covered with loose cement. I will ask you whether there are not spaces 50 feet long there where there is none.

A I never saw such spaces without any cement.

Q Do you mean to say that that blue cement on the bottom has not been washed out?

A A great deal of it has.

Q It has been testified here that none of it has been taken out of the pit?

A A great deal has been taken out.

Q It has been testified to the contrary.

Mr Byrnes That is a mistake. No such testimony has been given here.

Mr Badwalade. Unless my
ears have deceived me
Maybe they are not quite
as long as they might be.
But that is the way I
have heard the testimony
What is the width of that
bare place upon the bed
rock according to your
Scale? Set me see

A Nearly 100 feet.

Q What is the width of
it there where it is bare?

A There is very little
bare there. That is in this
place. Probably 20 or 25
feet

Q You call that very
little? Ayas sir

Q Well it is 20 or 25
feet? Ayas sir

Q You say that where
the bed rock is bare for
100 feet there has been
cement washed out?

A Yes sir

Q With what? A With
water I guess.

Q That is, there is 100 feet there that has been washed out with water? A It is 100 feet wide across the channel. I should judge it to be that. The scale there shows it.

Q All blue cement? A Yes. That has been blasted and washed away.

Q Washed away with water? A Washed away with water after it has been blasted out.

Q And has gone through this drop 80 feet; down ~~the~~ through the tunnel? A Yes.

Q Is water capable of acting on that blue cement?

A After it is blasted out and loosened up in that way.

Q Then it washes quite easily does it not?

A I think so.

Q You never heard to the contrary? A I know it will wash after it is broken.

up.

Q That is to say, all that is needed is powder and then water. A That is all.

Q Hydraulic washing is simply the pulverizing of particles of earth, so as to free the gold? A Not necessarily. I have seen it wash off in heavy masses as large as would go through the flume at this time of the year.

Q Is it not remarkably fine as a general thing? A Not always so.

Q As a general thing in hydraulic claims? In the blue cement?

A On top it is fine; generally.

Q You say it is not very fine in the top? A I say it is generally fine in the top.

Q Then I will put it this way: hydraulic washing is not complete until there is a perfect disintegration

of all the particles of earth, so as to free the particles of gold from contact with the dirt?

A In these washings there is a great amount of dirt that is washed out and runs into the river and don't break up at all.

Q I ask you whether by hydraulic washing is complete until there is a perfect disintegration of earth? So as to enable the particles of gold to come in contact with the quick silver?

A It is complete so far as by hydraulic washing goes, in this mine, at Gold Run, when it is washed out of the bed into the tunnel. Then it goes off and is floated down in masses; and whenever it is washed from, or whatever kind of cement it may be, the hydraulic washing has taken it up

and carried it off.

Q Of course but that is not my question. I will put my question in this way: I will ask you if disintegration is complete of the larder remains around the particles of gold? When the gold remains in the larder it will not be acted upon by the quicksilver?

Ans Sir. You will not get the gold unless you loosen the larder around it.

Q And for that reason hydraulic washing is not complete until this perfect disintegration occurs? So that the gold can be acted upon by the quicksilver? A It would not be disintegrated while the dirt was about it. The washing would not be so complete as you say so as to get all the gold out.

Q Now tell me about the

operation of water upon what is called here or upon what you describe here as the blue gravel?

A After the blue gravel is blasted down, it is broken so it will go through the flume. To get rid of it. After getting out the dirt that is pulverized

Q Well will the water combined with this drop of 80 feet break it up?

A It will if it is not very hard

Q I mean: Take the bank as it stands there after you get rid of this blue cement? Ayes sir. Above the line of that blue cement, I think that drop would pulverize it all

Q Without any difficulty? Without any trouble?

A Without any trouble

Q Is not this material used a second time before it goes out of Canon Creek

by Hinder? A It goes through his undercurrent

Q Is it the tendency of that to break this material up still finer? A Not in going through the undercurrents. It breaks it up in going through Cañon Creek considerably; some of it

Q And in passing over the undercurrents? A The undercurrents don't break it up. They merely separate the fine from the coarse.

Q Do they not have a tendency to produce a greater pulverization? A I think not. You never by going over the undercurrents?

O yes sir A I think not.

Q How many perpendicular drops are there in Cañon Creek? A I don't know.

There is one drop in one place which I should judge was 2 or 3 hundred feet

Q Is that perpendicular?

A not exactly - nearly.

Q What effect would that have upon the material that comes out of that claim that is not stone?

A It breaks up a great deal of it

Q What effect does it have upon the blue cement

A Well, I think the blue cement would pass through Canon Creek and through the North fork if there be grade enough to take it, without breaking up. That is that cement there

Q You mean that composition?

A Yes sir. There is some 30 or 60 feet of bottom gravel in that claim that will pass through the North fork if there is grade enough to take it. After it is broken up

Q After it is shatzen up by the powder?

A Immediately around the powder it is more

pulverized than elsewhere

Q The powder will break it up then? Answer no

Q In going down the river from Peckemys Bar to Rice's bridge did you see any of that material?

A I think I saw some cement down there similar to that

Q Where? A On the bars alongside of the river

Q How much? A Not a great deal but I noticed a little. There was not much of it

Q About how much?

A I don't know that I saw many pieces I saw some

Q How many pieces?

A I don't remember seeing more than 2 or 3.

Q Well, it would be very noticeable; — as cobbles stones? A It would be noticeable if a person looked at it. I was not looking for it. It would be

seen very plainly if a man was looking for it there

Q Could you make the 51 crossings which you did and do all the work there that you did without noticing it? A I didn't make the crossings. That is one part of the answer.

Q You walked down the Cañon? A I walked down the river all the way.

Q Right alongside?

A I generally took the easiest places to walk

Q Did you see any of that remaining in the bed of the river? A I did not. <examining>

Q If it had been there you would have seen it?

A I don't know as I would

Q You found that river bed crowded with cobble stones. Very thick with cobble stones? A The principal portion, or a great deal of it was

filled with cobble stones.
For 3 or 4 miles below Cañon
Creek the cobbles are very
thick in places

Q Coarse cobble stones.

A Yes sir; Some pretty
large one

Q That is what I mean.
I will ask you whether,
in all of these streams
wherein these cobbles are
deposited and where they
have stopped the action
of the water, or have
been subjected to the
action of the water they
do not grade themselves
according to the size.

A Generally

Q Well always? A I sup-
pose they would grade
themselves according to size

Q Well, don't they?

A Not always. And for
the very reason —

Q Why? Don't they as-
sume the form of a pavement?
A Well, the form of a

pavement I have seen.

Q Don't they make a good road? Ayes Sir

Q Don't they set themselves according to their respective gravities? Ayes Sir

Q Beginning at the top of the river and extending to the bottom? A Generally

Q Always? A Necessarily so I should judge

Q And then don't they form an almost perfect surface for floating the lighter material?

A They form a bed so solid that it is almost impossible to move it after the river has washed over it for a season

Q You have seen cobble stones set in the dirt in City streets by workmen?

Ayes Sir. They are generally set on edge. Up and down. Lengthwise or the deepest part up and down. In the river they lie flat.

Q Don't the rivers set them in with the same degree of smoothness, and only in a different way? A I do not know either, that you can find the cobbles there so close together as you describe it. The bed is mixed with sand

Q Does it not make a perfect road? A I think not. I don't see any road there on the river; although you could travel on the river. But I wouldn't say there was a perfect road.

Q Wouldn't it make a splendid bed for a rail road? A It would if it was placed right, but I believe the material is not generally considered good ballast. I believe that if there was not water in the river it would make a good road bed all the way up.

Q Almost a perfect road?

A It would be a very good road bed.

Q And the top would be these cobbles?

A The top and bottom both.

Q You find the heaviest at the mouth of Cañon Creek and the lightest the greatest way down?

A I think so.

Q In washing earth why is the bottom of the flume made rough? A I do not know that it is made rough.

Q When these cobbles leave the fold Ben mine they have more or less earth clinging to them have they not?

Answer ~~not~~ without it is cemented, but going into the shaft that you speak of and into the tunnel it will clean the rocks pretty well.

Q Before this matter reaches the drop, these cobbles

have more or less earth
on them have they not?

A Well then not on
them

Q Do they not have to
have it on them? A Not
without it is cemented

Q Well by cementing I
suppose you mean
simply adhering do you
not? A Yes Sir, adhering

Q What do you call
cement? A I call this
here (No. 1) Cement

Q What produces that
cohesion? A I do not
know, iron I guess to a
certain extent, I do not
know what other elements
there are

Q There is clay is there
not, silica? A Silica
there is some I guess and
iron to a great extent

Q It gets its color from
iron does it not? A Not
like blue

Q But on exposure to the

air? A It oxidizes the iron by exposure

Q Don't those boulders after being exposed from the close of a washing season to the commencement of another acquire a dark hue? A They change their color somewhat

Q Become red do they not?

A Not in one year they would not

Q And they show a tendency towards disintegration? A Yes sir.

Q These cobbles that you find at the bottom of this river have they got any of this stuff adherent to them? A As I said before I only seen two or three pieces to notice with cement to them

Q But are not the cobbles which are called wash cobbles thoroughly washed?

A They are thoroughly washed

generally by the time they get into the river

Q But you saw no cobbles in this 9 miles with any cement adhering to them? A Excepting these two or three instances that I speak of, cement and cobbles

Q If there had been any more there you would have seen them wouldn't you?

A I do not think so. There may be any amount there and I not see it

Q Do you think there was?

A I think there was more there but I was not looking for it

Q You had to look didn't you from point to point? you could not help it seeing your lines could you? A You mean from the instrument to the flag or the target?

Q Yes sir A Of course I had to look at them to get

the points

Q Didn't you have to travel it? A I had to travel it, not in a direct line

Q Did not that compel observation on your part?

A Not necessarily. I was attending to the business of the survey, not looking for rocks

Q You were not looking for anything except lines?

A Well yes. I was looking at the river generally.

Q Did you have your glasses with you? A I do not use glasses in walking

Q You do not need them?

A Well I need glasses but I am very near sighted

Q You saw no masses of cement lying in the channel; now you are certainly able to tell us whether you saw any considerable amount of that cement lying on the bars
A If I was able I would

be very willing to tell it ;
I have no reason to keep it
back

O Well I do not suppose
you have, but the fact is
you did not see it.

A No sir I did not see
it

O But, if it had been
there you would have seen
it. A I do not know
that. I say I am very
near sighted and I was
not looking for cement

O You had no idea that
any of that cement leaves
Cañon Creek unless it is
disintegrated. Alwell I
have an idea that it
will go into the North
fork any amount of it
when they are washing
that particular part of
the bank

O Where they are washing
that particular part of the
bank, that is for the first
10 or 15 feet. A The first

60 feet from the bed rock
 Q And that in spite
 of the use of powder on it?
 Ayes.

Q In spite of the use
 of water on it? A In
 spite of the use of water
 there will a great deal
 of it get off in that shape

Q And in spite of the
 drop of 80 feet before you
 reached the tunnel?

A That fall will break
 up considerable cement
 that is not very hard,
 there is no doubt about it
 and going through the
 tunnel and the grinding
 of Cañon Creek —

Q Ant's? Then if this cement
 don't appear in this first
 9 miles where would we go
 to find it in mass?

A To the mouth of the
 American River — I do not
 know where you would find
 it

Q If we did not find it

in the mouth of the American River your theory would be wrong would it not?

A It should be situated between Canon Creek and a few miles up the river

Q It should be? Ayer is according to its gravity

Q But then it should not be at the mouth of the American River 18 miles away? A I did not mean to claim that it would be in any such place

Q You think it would all be found then before you got to Rice's bridge?

A I think so

Q And yet you did not find any of it that you recollect? A There is one thing —

Q (Lutts) Now answer that question. You did not find any of it, enough to create any recollection, any remembrance?

A I suppose if I was looking for cement I could have found it more than what I did, but I was not looking for it and I was not thinking about cement

Q Mr Smith did not tell you to keep your eyes closed when you went down that stream? And, and if he did I should not have kept them closed

Q I ^{just} want to get at it. That cement, if you call it rock, has less specific gravity than hollow rock?

A Very little, there is very little difference

Q Well it is less? A Well I do not know whether it is or not. I am doubtful about that

Q What would you think?

A I think probably that this particular cement <No. 1> is as heavy as rock

Q What proportion of that is composed of sand and

clay? A It is a small proportion. The rocks are generally as thick as they can be together - the interstices are filled up with something

Q I ask you the proportion
A I could not give the proportion

Q Suppose you take a mass of cement and put into it egg-shaped rocks that touch each other and then fill the interstices with sand and clay, what would the proportion be of each? A Probably the rocks would be 75 per cent of the whole

Q Then there would be 25 per cent sand and clay? A Yes sir

Mr. Byrne The Witness did not so state

Mr. Badu alade Q Did you not say there would be 75 per cent of rock?

A Yes sir

Q And 25 per cent of sand and clay? A Yes sir. I should think there would be as much sand as could be placed there. (referring to No. 1.)

Q Now I will ask you whether the proportion of sand and clay would not be larger? A I think not.

Q Whether it would not be 33 per cent? A I believe not.

Q What is the percentage of the small material in that mass of cement there as compared with the boulders? A What do you call the small material small gravel and sand?

Q Yes sir, the fine gravel and sand and clay and whatever cements it together? A I should think there was fully 25 per cent.

Q That don't mean a great deal? A I means more than 25 per cent

Q It might mean 80 per

cent Well it is over 50 is it not? And Sir

Q Well is it over 45?

A I think not

Q Well give us at least about what it is?

A I do not know that I could give it. I have to turn it over considerably to examine it and then I would not be able to know

<Question repeated>

A I will have to turn it over to examine it and then I would not be able to give it exactly

Q Turn it over and examine it A <The Witness does so> I do not believe it would go over 25 percent of fine material there amongst the cobbles

Q The material finer than the cobbles? A Well what I call rock; there is some as big as a hens egg and some smaller

than that

Q All of the solid material below the size of a hen's egg you think is only 25 per cent?

Answer I would say smaller than a hen's egg

Q You think there is only 25 per cent while the solid material from a hen's egg up including a hen's egg is 75 per cent?

Answer there is not 25 per cent of sand and clay in that cement

Q Mr. Gould said yesterday that they had never washed any cement at all because he said water made no impression on it - that would not be so would it?

Mr. Byrne Mr. Gould did not say anything of the sort.

The Court Of course he did not say that. He said of this hardest cement.

Mr Badwalader that is the hardest. He said there was 10 feet of the bed rock there on which this cement remained — now when you speak of the hardest cement, you refer to the cement right on the bottom do you not? Ayes

Q The cement that you have seen washed off in water after powder is used and washed freely?

A What I mean by washing it is, washing off in lumps of that size and larger, some fines but not disintegrated, but washed out in lumps

Q You have already said that after the use of powder it washed freely

A It washes out freely with sufficient water

Q You have also stated that for 100 feet of this cross section this cement had been washed by the

water off the bed rock?

Ayes res

Q and you have also said that in ten miles of the river —

The Court Is there any object in repeating it if it has been already testified to?

Mr. Bradwalader Q Why did you take this cross section at this particular place?

A Well I do not know.

Mr. St. Amilton Smith Requested me to take it there about in that place and I took it, I suppose it was to show the pit as well as the upper washing, you took no cross section in the upper pit did you?

A Well it is across the upper and lower pit both, that cross section is across the whole wash, the upper and lower wash.

Q It takes in the upper

and lower? A yes sir

Q This is the upper pit is it? the red? <referring>

A What is shaded red is the upper pit

Q What effect upon the washing of the lower material does the passage of the material in the low pit — what effect is produced upon the passage of the material that is washed from the upper pit — it passes over it doesn't it? A It passes over the material that is washed in the lower pit.

Q Yes sir. That is the material that is washed in the upper pit passes over the material in the lower pit? A It would if it was left there.

Q It passes over it? What effect does that have in making easy or less easy the washing of material in the lower pit? A It

assists in washing rocks
more freely

Q It assists does it not?

A Yes sir

Q What effect upon the
washing does the standing
of those banks say half of
the year exposed to the
action of the elements?

A I think very little if
any.

Q It would have some?

A Not to amount to anything
in hydraulic washing.

Q Why? Because

V the compactness from exposure is so great
comparatively speaking ~~except~~

A. The exposure to the atmos-
phere don't affect it any
more than a few inches
deep

Q What is the average
depth of the red soil
in that Gold Run District?

A I have given the
average as 75 feet

Q Is it 75 feet across
that is simply or 75 feet

in the Country? A In the whole Country, the whole wash

Q Well I am not speaking of the washings but the overlying strata of red earth.

A Well these washings here have been nearly all

— Q But I am not talking about the washings!

how deep is the stratum of red earth overlying the whole country? A In some places there is none; over the gravel beds it is sometimes deep

Q But as a general thing how deep is it? A I do not know what I could answer that

Q Is it over four feet?

A Around anywhere near the gravel beds the red soil will vary from 5 to 20 feet

Q Well now elsewhere?

A Elsewhere we find a little, sometimes none.

we find the bed rock clear to the surface and no soil at all on it

✓

Q Now what is the area in acres on the surface of those excavations? A 555 acres.

Q That was 555 acres of red soil was it not?

A Red soil and gravel

Q What kind of trees grew on it? A Pine and oak, cedar and spruce

Q How is it adapted to fruit trees? A It is very good for fruit raising

Q That is considered an admirable district for fruit raising is it not?

A I believe so

Q In getting at the area of that pit you guessed at its depth to be 75 feet did you not? A We estimated the depth to be 75 feet

Q Well that was a round

number was it not? Ayes

Q That was a guess, was it not? A Well I suppose you can call it a guess to a certain extent.

Q Nothing more?

A Well it is better than a guess for the reason that a man that did not know the country would not guess any where near it

Q Didn't you guess at the 1875 and 1876 surface of the Gold Run pit?

A What do you mean, the depth of it?

Q No, the 1875 and 1876 surface of the Gold Run pit? A I do not know that I have made any estimate particularly of that — you mean as regards the depth or width of it

Q No, I mean the surface line, the ideal surface line of 1875 and 1876 —

you guessed at that did you not? A I marked it just as I remembered it before it was washed

Q Just as you remembered it? A Yes sir

Q Now you told me a short time ago that you did not know what washing was done there the year before the tunnel was completed? A I did tell you so I believe

Q You do not know what washing was done the year before? A No sir

Q Do you know what quantity of water was used there? A I do not

Q Do you know what effect the rains of that season had on any of the winters had on that surface? A The rains have had a considerable effect on it in the winter time washing down mud

into the rivers

Q Well I did not ask you about that but I ask you upon the surface of that pit? A You asked me the effect that the winters had on the surface

Q No, the surface of that pit? A The surface of the pit, that is the 180 feet above the bed rock

Q Upon the surface of that pit as it existed before the tunnel was completed?

A It is enclosed inside run rocks except in places where they had sluiced through

Q Is that pit washed out clean? A No sir

Q Well what is that?

A It is uneven you find some old timbers

Q Washed down to the bed rock is it not?

A In the pit itself the pit proper it is

washed to the bed rock
in places

Q Whenever it is washed
it is washed clean is
it not?

A No sir there are places
where cement is left on the
bottom, I do not know
how thick probably from
5 to 10 feet thick.

Q How much of an
area in that pit is
where the bed rock is
washed clean?

A Maybe 2 or 3 hundred
feet, 3 or 4 hundred
feet I do not know.

Q Well what kind of feet
each way?

A Each way.

Q How many square
feet would that be, how
many square feet in the
bottom of that pit is
the bed rock washed perfectly
clean?

A I could not tell you
I never measured it,

Nor to make any Calculation on it, in some place you find it broad and then again there is none at all.

Q How many yards of that hard blue Cement has been washed off of that 200 feet square on the bed rock?

A I do not know.

Q Take your Cross section here.

A The Cross Section don't show anything but a line

Q But here I understand that you have drawn a Cross Section here (Referring that blue line you made is very blue?)

A I understand what you mean, The blue is shown to indicate where the blue gravel came in, the levels, that is all

Q What do you call that
A That was blue dirt only not so blue as the bottom

but it is to distinguish it from the Cement more than anything else.

Q I see that I did understand you - now I want to know how much of that very blue has been washed off of this 200 feet square from the bed rock?

A I do not know any more than it is shown here

Q The banks would show?

A The banks show the width of it but not the length

Q Well what is the width?

A 400 feet.

Q Well now what is the length the other way?

A I do not know I did not measure.

Q Well the bed rock exposed?

A The bed rock exposed there is 4 or 5 hundred feet, I did not measure the width at that point

Q What is the depth of the Cement

A About 50 or 60 feet.

Q The depth of this Cement washed there 50 or 60 feet in this place 400 feet square now we understand each other do we?

A. I did not say four hundred feet square that I know of.

Q Give us the Area then in feet - give us the Area of the exposed bed rock from which that very blue cement has been washed from the action of the water?

A I cannot give it to you
Q Well is it 400 feet square?

A I do not know that it is
Q Is it 500 feet square?

A No sir there are some places where the bed rock is not exposed but very narrow, very narrow along the Channel and other places wider, I do not know that it would average 200 feet

wide what has been washed
or uncovered.

Q Well 200 feet shall we
take it at that time?

A Well I say I do not know
that it is that, I do not
know that it is 150,

Q But you state you
made a survey there?

A I made a survey in the
bottom but did not take
the bed rock particularly
for it

Q You established the po-
sition of the drop didn't
you?

A We established the position
on the bed rock of the
deepest point.

Q You established the
position of the drop?

A That do you mean
the drop into the tunnel.

Q Yes Sir?

A Yes Sir.

Q You must have been
right down there then?

A. That was not established

at that time any more than the gravel was 180 feet above the bed rock, over the tunnel,

Q You said you established that and the position of the drop, that bed rock was not bare?

A The bed rock is bare in places.

Q How many times have you been in that mine since 1876?

A I expect over a half a dozen times.

Q Were they at work while you were there?

A Yes sir sometimes.

Q What were they doing?

A Working once or twice that I was there.

Q Were blasting the banks?

A I never saw them blast the banks. I have set out tunnels for them to blast by.

Q You have seen the material of which the bank was composed haven't you?

A yes sir

Q Of what material is it composed?

A Cement and gravel.

Q Was that a fair sample of it (Number one)?

A That is a fair sample in the bottom.

Q As you go up does the stones get larger or smaller?

A There are large stones all the way up through the blue gravel to the surface 180 feet in places, They are not so thick as they are in the bottom and not so many.

Q But they are large stones are they not?

A No sir not larger some are larger and some are small.

Q None very large

A I have seen some very large rocks there

Q How large

A Some would weigh a thousand pounds some more

than that

Q That would be the largest
A Not the largest probably
but the largest I have seen

Q All the time that you
have been there?

A Yes Sir.

Q The largest are always
on the bed rock are they not?

A Generally so not always.

Q Well as a rule with
Sedimentary deposits?

A I do not know whether
you can call it a rule
there are mines in Dutch
Fear where I have seen rocks
half as big as this Court
Room one hundred feet
from the bed rock and they
had to blast them for weeks
to get them out of the way.

Q You knew where they came
from

A No.

Q You have some idea

A I have no idea where
they came from; they came
from the hill sides that

exist somewhere.

Q That is so is it not -
they came from the hill
sides and rolled down to
where they were?

A They came from some place
higher than that no doubt.

Q They are not a part
of the deposit in that river
they were not from matter
moving down that stream?

A That is what you say.

Q They were not matter
that moved down the bed
of that old stream?

A No sir they must have
rolled in from the side

Q The bed of that old stream
necessarily had little or no
current in it?

A Very little grade.

Q And little or no current?

A Of course the lighter
the grade the less the current.

Q Well I mean little or no
current otherwise there would
be no clay?

A No clay - there is plenty of

Clay there

Q Well otherwise there could be no Clay there as a Cement?

A In this mine that I speak where those rocks are.

Q You do not understand me although I understand you to say that the Current of those old Channels was necessarily very slight - where gravel is washed in any stream do you find Clay?

A You find Clay sometimes in an eddy.

Q Don't the Clay always move with the current where there is a current?

A We find the Clay generally where there is no Current or very little Current.

Q Tell a stone that would weigh a thousand pounds do you know what its dimensions would be?

A I do not

Q It would not be very large would it

A It would depend upon the Character of the Rock Some Rock it would it would be larger than others

Q Did you ever see Mr Gould blasting any boulders in that Claim?

A I do not know that I ever did.

Q Tell you say that you have been there a great many times have you not?

A I have been there several times in the mine.

Q It would be a pretty severe operation would it not and a pretty costly operation to blast a boulder

A I have seen 50 or 60 men engaged in one mine blasting boulders.

Q But it is a pretty severe undertaking blasting a boulder?

A It is very expensive.

Q You have to drill into

is in how many places
A Very often they do not
drill at all

Q Is it done by manual
labor is it not?

A No sir they put the pow-
der on the surface of the
rock.

Q Just put powder right on
the surface of the rock, what
kind of powder?

A Giant powder and Hercules
powder

Q Black powder would not
have any effect at all

A I guess not

Q When did they commence
using giant powder in that
mine?

A I do not know.

Q Since the discovery of
the monitor?

A I suppose so, I think since
the discovery of the monitor

Q They do their heavy blas-
ting with this newly discovered
powder do they not

A They do chiefly there

blasting around this district
with black powder - bank
blasting.

Q The bank blasting?

A Yes sir

Q What is the length of
that excavation, the total
length of it

A Of this one (Referring), about
13000 feet

Q That would be a little
over two miles?

A Yes sir two miles and a
half

Q Does that show the
manner in which the surface
is cut?

A Very nearly sir as near
as I can get it

Q The surface has those
curvatures?

A. Yes sir

Q What is the probable
length of those curvatures
around that 300 acres?

A Well it would exceed six
miles I think

Q It would be six miles

to get around five hundred acres?

A Five hundred and fifty five acres? yes sir

Q Would not it be twice six miles?

A No sir

Q It would be nearly four miles around five hundred acres if it were square?

A Yes sir

Q Now you say only six miles around that - just look at that again?

A I know the length of it, a little over six miles

Q Give us your opinion as an engineer?

A. It is possible it would be seven miles but I hardly know what distance it might be around it.

Q It might be ten might it not? A no sir

Q What is the average height of the bank subject to the action of the elements the average height of the bank

Around that pit?

A The bank is all the way from 150 to 200 feet, from that down to nothing some places there is not ten feet of the bank left

Q That material from those banks has no means of escaping into Canyon Creek except through this tunnel?

A No there is some places where the open cuts are there yet into Canyon Creek.

Q Well the open cuts of course would be over the rim rock?

A Through the rim rock some of them and some of them over.

Q The cuts would have to fill up an average of 75 feet, now stopping up this tunnel it would prevent the escape of all those banks wouldn't it?

A No not without you stop up all the outlets of the upper surface?

Q Well it would follow the surface of the rim rock would it not

A It would follow that pit in the region of that pit.

Q There would not be much wash on the surface there would there?

A There.

Q Well there would not be much wash on the surface?

A You mean the surface of the pit or the surface above the pit.

Q Yes Sir?

A There is not much chance for any great amount to escape there.

Q What do you say the average height of the banks would be for those seven miles around that pit?

A The average height of the banks has been given or 75 feet.

Q And that is red earth?

A That is red earth and gravel and sand,

Q Red earth such as has been produced here?

A Yes sir I suppose so I do not know, I have not seen it.

Q That is readily moved by water is it? A Yes sir.

Q I understand you to say that bank blasting is done with black powder?

A Generally, some use Judson powder, I believe that is black too.

Q Well what is used in this mine here?

A I do not know.

Q You do not know whether it is black?

A. I do not know whether it is black or Judson.

Q Or Giant powder?

A They do not blast banks with giant powder.

Q When was the pavement of the River as you see it now between Canyon Creek and Pickering's bar established?

A I never saw any pavement

between Canyon Creek and
pickings bar

Q Well at the mouth of
Canyon Creek?

A I do not know anything
about the mouth of Canyon
Creek lately, I have not seen
it in years

Q You have crossed there
have you not?

A For a great many years.

Q It has been there for
several thousand years?

A The River has I guess.

Q Well I mean the pavement?

A I believe there is none
there now, I have understood
there is none there.

Q Did you go to the mouth
of shirt tail Canyon?

A Yes sir.

Q Did you find any different
condition of things at the
mouth of that Canyon and
the bed of the river than
you saw at the mouth of
Canyon Creek?

A I did not see the mouth

of Canyon Creek.

Q Have you ever seen it?

A I saw it I think about 8 years ago the last time I saw it.

Q Well eight years ago?

A. Seven or eight years ago

Q As you saw the bed of the American River at the mouth of Canyon Creek eight years ago how does it compare with the bed of the American River at the mouth of Shirt Tail Canyon?

A As near as I can remember the mouth of Canyon Creek there was no filling there. At the mouth of Shirt Tail Canyon there is considerable filling.

Q Well did you find any considerable filling at the mouth of Shirt Tail Canyon when you were there this year?

A. I found from ten to fifteen feet?

Q Well from 10 to 15 feet

And no more ?

A I do not think there is any more than that.

Q Did you measure it ?

A. I did not measure it but I have been there and

Crossed that stream when there was no filling at all

Q But now there is from ten to fifteen feet there ?

A Yes sir.

Q As you take it in by the eye ?

A By the eye that is all

Q Speaking of the bottom of flumes have you seen the bottom of this Gold Run flume ?

A I do not remember of seeing that of late years.

Q When did you see it

A. I have seen it I have been in the tunnel.

Q What is the bottom made of ?

A At that time it was made of blocks

Q What kind of blocks

A Wood blocks.

Q How are they put together?

A Put in the flume and wedged apart probably an inch or two inches?

Q It is not a close fit is it?

A They do not fit them close

Q It is purposely made rough is it not?

A It is purposely made with seams between.

Q Well it is purposely made rough is it not?

A Well the blocks are generally laid even through the flume.

Q Well the bed of the flume is smooth in it before the blocks are put in?

A Yes sir planed generally

Q The blocks are put there to make it rough?

A No sir not by any means

Q Well don't they frequently use Cobble stones?

A Yes Sir they use Cobble Stones sometimes to save blocks it is cheaper.

Q Well what is that for

A Well it is to keep the bottom of the flume from wearing out.

Q What else?

A For saving gold.

Q Well what else

A. Well I do not know anything particular else

Q Well is it not for rubbing off whatever material that may be adhering to the stones?

A Well I do not know whether it is put there for that purpose or not, it would have that tendency to a certain extent.

Q When they put Rail Road Iron in?

A That is merely for the currents sake.

Q For the purpose of making the surface rougher than the flume?

A. No sir they do not do it for the purpose of making a rough surface. They do it to save the bottom of the flume

And to save the gale

Q Well a surface made of
Rail Road Iron is very
rough is it not?

A Not in the way that I
look at it; I should call
it smooth for rock or dirt
to run over

Q Well that is one section
of it but how is the cross
section?

A The cross section would be
rough.

Q Very rough wouldn't it?

A Certainly.

Q Now would not the stones
move from side to side?

A These stones put in for
blocks.

Q Yes sir? A No sir.

Q But I mean the material
going down, the cobble stones
A It would break the current
a great deal more than the
blocks would.

Q Don't they crowd each other?
A. I believe not, they are
generally wedged in so that

they stay in place.

Q No but the stones moving?

A The stones that run on the top of the others.

Q Yes sir dont they crowd each other?

A. I do not know, they crowd each other sometimes and get blocked up, the intention of the blocking of a flume is to make it even so that the material will run through easily and not anything to check the force in the flow, they use the smoothest surface they can get as long as they get openings for the gold to settle in.

Q What would be the cross surface of a number of bars of Rail Road Iron set along side of each other would it not be a very rough surface?

A It would be a rough surface for water to run over or to run anything over across the section, across the iron

Q Well the iron set side by side does it not — the base of the Rail Road bar is broader than the top is it not? A. Some.

Re-direct Examination
 E. C. Uren

Mr Byrne In what manner
 is the railroad cross placed?

A. The condition the way
 I have seen them there, put
 lengthways of the flume.

2. Did you ever see any
 put crossways

Mr Cadwalader I did not
 say that they could not put
 them crosswise

Mr Byrne Could not they be
 by cutting to a proper length
 put crosswise if necessary

A. I never saw them put
 crossways

2. Is it or is it not true
 that masons desire to have the
 bottom of the flume as rough
 as possible?

A. The bottom of the flume?

I yes sir, do they seek to
 make it rough or do they desire
 to have them smooth.

A. They seek to have it smooth.

Q Why? A For the material to run over it more easily, to get through more dirt.

Q You spoke of Shirt-tail Cañon - You said that some 10 feet of tailings were observable in the river at that point? A 10 or 15 feet, I stated.

Q Where do these tailings come from? A They probably came from Shirt-tail Cañon, the bigger portion of them.

Mr Hart. Probably?

A I do not know.

Mr Hart. In view of strike that out as being incompetent. I do not want his opinion as to whether it is probable or not.

The Court. I think I will let it remain.

Mr Hart. I will take an exception.

Mr Byrne What mine's discharge or tail into Shirt-tail Cañon.

(Ex)

A There are some mines at Yankee Jim's and Smoky Canon and some at Wisconsin Hill, I do not know exactly the extent of them

Q But you know that these mines do tail into Flint-tail Canon

Mr. Cadwalader We proved that Mr. Byrne did you examine the river above Flint-tail Canon? A Not between there and Rice's Bridge

Q Did you see it then?

A I did not see it only from the road, immediately below Rice's Bridge I saw it for a half a mile

Q How near were you to the river? A Well, from the bridge crossing the river we followed along the side hill and probably did not get a half a mile from it until we got nearly to the top of the hill

Q Are there any tailings in the river below Rice's Bridge

And above fruit-tail Cañon.

A I do not know, there
is none immediately below
Rees bridge.

2 Why are there none below
Rees bridge?

Mr Cadwalader I object to that
The Court. If there is any
special position there, he can
state

A I do not know the cause
for there being no tailing
there immediately below Rees
bridge, any other than the
grade immediately above
the bridge

2 What is the grade above
the bridge for the first Section
that you measured

Mr. Cadwalader I object to
that, he gave it to us yesterday
He gave the face of the river
here

Mr Byrne Will you state again
where the fall is if you
recollect? A The fall
for the first Section above
Rees bridge is a little over

24 feet per mile - 24.62

I know much tailings are there in that section of the river Mr. Cadwalader I object to that. He has already testified about it and his testimony has been stricken out on the ground that he did not know anything about it.

Mr. Byrne I will ask you then is there much or little?
A There is very little.

I How does that section of the river compare in grade with the sections of the river higher up?

Mr. Hart. We object to this on the ground that it is not re-examination. That it is examination on the same subject and the same matter upon which he was examined in chief and upon which he was not cross-examined.

Mr. Byrne. I want the opinion of the witnesses why there are so few tailings in that particular portion of the river

When there is so much less grade than there is in other portions of the river higher up. In relation to that subject he has been thoroughly cross-examined and his knowledge of the whole matter has been assumed.

The Court. I do not remember that he was asked as to the Mass.

Mr. Byrne You were asked about the banks which remained around the sides of that Excavations. I want to ask you whether or not, these banks will be washed, or whether the washing so far as that part of the mine is concerned is completed? A. The

surface washings of the hydraulic mining district is practically worked out - finished.

The Court. Does that mean that the runs will be left as they are.

A. The runs have so little on them, that they have quit

washing them. There was nothing to pay them for washing further Mr. Byrne. The question was whether they would be washed at all

Mr. Cadevalader By the Elements?

A They will not be washed by hydraulic process

Mr Byrne To what extent are these banks that you have described subject to elemental rage. How many thousand years in judgment would it take to wash them down by the ordinary action of the Elements?

Mr Hunt. We object to that until the witnesses is shown to be competent — I withdraw the objection

A. The banks stand very near perpendicular that are left around the edges of it and the railroad company have left the miners wash up in the banks within 100 feet of the railroad where the bank next to the railroad is at least 200 feet deep and there are supposed

to stand there intact, or nearly so for all time - any reasonable time

Mr Byrne. How long have they so stood to your knowledge?

A Well, the last 10 years.
I Now you were asked a question as to whether there was any chance of escape for this material from the Gold Run District excepting through Cañon Creek and you said there was not, I believe? A There is a pit in the tunnel that some of it could get to. These ravines that run down from the mountain in Cañon Creek cut below the upper surface washing in nearly all cases and have to go across things - they would have to cross the ravines; these ravines were outlets to the upper washings, Every one of them in their time I would not that all discharge into Cañon Creek?

A It would be all discharged into Cañon Creek.

Q I will ask you if there is any other way or manner of working those mines excepting by discharging the material from them into Canon Creek - I mean the deep channel now, that which remained

A Not without they run another tunnel

Q Well, is there any present or available means of washing them, excepting by washing them into Canon Creek?

A No sir, none

Q Did you say that 200 feet square of the bed-rock, had been exposed there in the Indiana Still mine?

A I do not know, there is considerable bed-rock exposed there, but I do not know what it is

Q You never measured it?

A I never measured it, nor I do not know that I could arrive anywhere near the true measurement of it.

Q Was it all necessary for

The purposes of the survey which
you made to measure the Ex-
posed surface of the bed-rock?
A Not at all

Q. In washing a hydraulic
bank what is the usual process
with reference to beginning at the
bottom, or commencing at the
top - Explain that to The Comr.

A Beginning at the bottom,
or commencing at the top?

I Yes. How do miners usually
wash a hydraulic bank?

A They commence from an open
cut to the flume, and open out
in the bottom

Q At the bottom?

A At the bottom

Q Have you ever made an
examination of that bottom
of the channel or stratum
with a view to ascertain what
proportion or quantity of
sand or clay that it contained?

A No sir, I did not

Q. Speaking about the Cement
in the river you say you saw
some? A Yes sir, 2 or 3 places

Q. Suppose now, that there had been a large quantity of Cement there would it have been visible to a person passing along or would it be covered up by Sand and the lighter material?

A. As the water goes down in the Summer the lighter material covers the area on the top of it.

Q. What appearance does the surface of that river now present to the eye, of the person passing along there?

A. Well, there are some places where the rock was exposed especially in channels. But it is 'sandy' as a general thing on the surface.

Q. Would this Cement be upon the surface of that river if it was there, or would it be near the bottom? A. It would be on the surface unless it had been deposited on the bar and the water had not reached it yet.

Q. Will you describe to The

Q^r. What is an under current?
 A Well, I am not particularly acquainted with under currents. The way I understand an under current is, a box that is set below the main flume to take the fine material from the bottom of the flume and leave the coarsest stuff to go outside for the purpose of saving the fine gold, separate the fine from the coarse material.

Q. What grade has an under current with reference to a flume, as compared with a flume?

A An under current has generally double the grade a flume has and probably more sometimes.

Q Is there anything to an under current that would have a tendency to break up or to pulverize hard material that might pass over it?

A There is nothing to break up.

Q. Do you say that thing

whole material a specimen of which is here before the Court comes wash easily?

A. What I mean by washing easily is that water will carry it away as long as it is not in too big masses to go into the flume.

Q. You mean that the action of water on it, disintegrates it, or pulverizes it?

A. Not generally, not much.

Q. Taking that specimen before you, No. 1, how far do you think that comes go in a river before breaking up and becoming disintegrated?

A. I think it may stay in the river for probably 2 or 3 years, more than that, may be 10 years.

Mr. Hart. That is entirely owing to what kind of river, I suppose if it fell a thousand feet it would be different.

Mr. Byrne. What is the effect upon that kind of material, of keeping it em-

stantly wet, or of keeping it
in the water, covered with
water, we will say

A, I do not believe that
it would ever be any different,
any thing but cement, and it
is claimed by a great many
that this cement equals in the
river cements again the same
as it is in the mines

Mr Hart. You say it is said
by many A Yes sir
Mr Hart. I move to strike
that out

A I have never seen it & I
have not seen in the bed of the
river to determine that

The Court. I do not see any
harm in it. Let it stay in.
Mr Byrne You were asked if
you made these measurements
of the river personally and
you said that you did not
personally make them but
that your assistants did

A They were made under
my direction

Q Did you see them made?

A. I did

Q. And do you know that they are correct? A. I know that they are correct. I had my own chain man for the purpose of making the measurements

Q. Your chain man?

A. My son who has been with me for the last 10 years for that purpose

Mr. Pyne you were present when they were made?

A. Yes sir

Q. Did you at the time note them down in your book?

A. I have got down every measurement as they were made

Re crop - Examination
of
C. C. Uren

Mr. Cadwalader What is there in the bottom of that under current to arrest the gold?

A. Riffles, long strips of —
Q. (Intg) How far are

the riffles apart?

A I think they generally set them about $\frac{1}{2}$ or $\frac{3}{4}$ of an inch apart, $\frac{1}{2}$ an inch apart I think.

Q How are they generally, across the current?

A I have seen them crossways and lengthways both.

Q How high are they in the bottom of the under current?

A I think some use 3×4 Scantling - I do not know.

Q How near are they together?

A Within $\frac{1}{2}$ an inch of each other.

Q And you say that the velocity of that undercurrent is greater than the velocity of the tail race?

A I do not say so.

Q What do you say?

A I said the grade is greater.

Q Well, these cross pieces, do you say they were made of 2×3 or 3×4 Scantling?

A Different parties put in different kinds of riffles in the bottom.

Q. That pavement makes a very smooth surface, does it not, or a very rough one?

A. Well, it makes a smooth surface.

Q. For water? A. No sir, it is not exactly a smooth surface for water.

Q. Those under currents are set there to catch the gold?

A. Yes sir.

Q. The gold is caught in front of these 3x4 scantling?

A. The gold is caught orthogonally, silver put between those scantlings.

Q. All this material runs through that, don't it? A. The fine material that is in the bottom of the flume, runs through that undercurrent.

Q. Then it gets the finer gold, does it not? A. It is intended to catch all the gold that is not caught in the flume.

Q. Only one more question.

You say that that cement might be deposited in a heavy

Current? a Which this
one here No 1

I Yes sir A. Yes sir, de-
posited in heavy current some-
times

I But I want to know from
you whether that cement comes
or deposits in a heavy current
whether it would be practicable
— whether it would be possible.

A (Intg) The current would
have to be very heavy to carry
that without having it settle
in the bottom, to carry it
in suspension

I Well, you have already
said that there comes not be
hardly any current, have you
not? A I'm what

I Well, when that cement
was forming in the old river

A No, I did not say so

I Well, didn't you say that
the old river channel had very
little grade to it?

A I said it had very little
grade but it was a very large
river apparently

Q Well, didn't you say it had very little current?

A The lighter the grade, the less the current — It depends entirely upon the volume of water.

Q That is not so, is it?

A Which?

Q The current depends on the volume of water as much as on the grade?

A. Very nearly so.

Q. Then therefore it is not true that the lighter the grade the less the current? A. Yes sir, with the same volume of water.

Q. That is only one factor in the matter of current, but could that cement form in running water where there was any considerable current — say yes or no because that is the last question? A. I could not answer yes or no for the very reason that I do not know how cement is formed, or how it is cemented.

———— " ————

Testimony

of
Hamilton Smith

called for defendant,

sworn

Mr Nibble Mr Smith What
is your profession?

A I am a civil and mining engineer

Q Where have you practiced it?

A I have practiced it in the eastern States and on this Coast and in Mexico and to some extent in South America

Q Do you belong to any of the learned societies and if you do name them?

A I belong to the Society of Mining engineers of America and to the Society of Civil engineers of America.

Q What experience have you had as a hydraulic engineer?

A I have read and studied

More or less ever since I have been an engineer. I have been in active practice as an engineer for the last 24 years, since I have been in California most of my Civil engineering and a good deal of my mining engineering has been in connection with water works and water - chiefly in constructing water works for the supply of mines -

Mr Cadwallader Hydraulic Mines ?

A mines of all sorts
Mr Dibble What experience and knowledge have you had in considering the flow of water both from a theoretical and practical point of view ?

A. Necessarily in my experience and practice as an engineer in building these water works I have had a good deal of

practical experience and I have looked into it very carefully, I have looked into the theoretical discussion of the flow of water very carefully. I have paid a good deal of attention to that and I have made a great many experiments in that connection.

Q Have you had any especial experience in the development and working of auriferous gravel mines in California and if you have state in what mines?

A I have had charge as engineer and manager - managing agent - especially of the Bloomfield and Milton Companies, two of the largest hydraulic gravel mines in California or in the world, they were under my general superintendence, and under

My direction Nearly all the engineering works belonging to these Companies have been Constructed. I think that under my direction they have expended nearly three millions of dollars, Chiefly in hydraulic works.

Q In addition to the Mines under your personal management have you privately examined other gold and gravel mines in California and if you have state in what Counties your examinations have extended?

A. I have examined privately a great many gravel mines and Quartz mines also in California, generally as an expert. people desiring to buy mines secure generally the services of some expert and obtain his opinion before making the purchase.

In that Capacity I have examined mines in nearly all the mining Counties of the State in counties extending from Eldorado County to Trinity County in the North and in every County I think between Eldorado and Trinity.

Q Is there an organization in the state known as the Miners Association?

A There is.

Q Who is the president of that association?

A I am.

Q From your position as president of the Miners Association have you or have you not acquired a special knowledge of the gold mining industry of California?

A The Membership of the Organization is pretty large, there are perhaps 100 Companies I am sure now in the organization

And from my position as president, which position I have occupied ever since the association has been formed I have acquired a very considerable knowledge necessarily of the mines and properties of the members of the organization.

Q Have you as president of the Association directed the making of maps and of surveys with reference to the Gold Run mine?

A I have.

Q Are you personally familiar with the mines of the defendant in this case, the Gold Run Ditch and Mining Company?

A Yes. I have been familiar with them more or less ever since 1870, or with the mines in the Gold Run district.

Q Are the mines of the defendant situated upon a separate, distinct gravel

Channel or do they form
 a part of the general
 system of gravel Channels.
 Or Channel - the mines of
 the Gold Run district.

Mr Cowdallader objected to
 the question upon the ground
 that it allows the witness
 to roam all over the State
 and through every gravel
 Channel from Puolame to
 Shasta and that is purely
 Irrelevant.

The Court overruled the
 objection.

A The Channel on which
 the Gold Run mine is situated
 forms a part of a general
 system of gravel Channels
 in the State generally
 known as Pleocene River
 Channels.

Q Have you particularly
 studied the characteristics
 and theorys of the formation
 of this system of Channels
 of which you say this
 is a part?

As I have

I Describe to the Court in a general way the Method of formation of these gravel Channels of which this is a part, and there subsequent Changes and Alterations as produced by natural Causes up to the discovery of gold in 1848 -

Mr Hart Objected to the question so far as it relates to the Method of the formation of these Channels as being Irrelevant and because the Witness is not Competent to answer the question -

Mr Cadwallader We will accept Mr Smith as an expert on all mining matters and especially with regard to the measurement of solids and fluids and I suppose that is all they have a right to expect from us I object to this testimony because it calls for

Speculation and it is
 irrelevant and immaterial
The Court so far as this
 question refers to the his-
 torical development and
 the condition of things —
 And I use the word "historical,"
 in a geological sense —
 I do not see that it
 would throw any particular
 light on anything in this
 Case, so far however as
 it relates to the distribution
 of this material which
 can be mined or the
 mode of the deposit or
 the nature of the strata
 in which it is found,
 it seems to me that it
 may in the view that
 has been presented by
 the Complaint have a
 material bearing on this
 Case, and in that connection,
 possibly, the situation in
 which it is found may
 tend to illustrate the
 supposed mode in which

the deposit was made. But the history - the geological history of the country - of course more or less imaginary, and depending on the imagination of scientists tracing back the condition of the country when this deposit was formed, seems to me cannot be interesting in this case as a matter throwing light on the evidence here. The examination and cross-examination of the last witness, led somewhat into the geological history of the deposit at Gold Run - as to whether large rocks would not be deposited at the bottom, and small ones on top, and sand in this place, and clay in that - whether that could be formed in running water or in still water. Such testimony

might illustrate some facts in this case, as to the nature of the country, geologically that is drained by the Sacramento River,

While this is an action of nuisance, it really involves, in a certain sense, more miners than these defendants. The theory of the complaint seems to be, as I read it, that the stoppage of the work in this particular mine, does not suppress the supposed nuisance. It involves, also, like proceedings against other mines in other places, who are contributing to the supposed nuisance. It might be said that the contribution to the alleged nuisance by these defendants would be entirely unimportant when considered in relation to other mines, and that-

involves possibly an examination of more mines. That those of this defendant necessarily on the face of the complaint itself

Mr Cadwalader The rule, I understand, is the other way, that a contributor to a nuisance cannot say that someone else is doing the same thing

The Court Still it would be unimportant in the case of a public nuisance, to stop one if it made no material difference to what already existed, or would exist without it. It may also be material in the view of the defense alluded to yesterday, as to the extent of gold bearing formations, and the extent of the industry which is supposed to be prosecuted, by obtaining

this gold. So far, therefore, as this evidence proposes to bring out these facts - the distribution of these formations and the mode of working, it seems to me that I cannot restrict this evidence.

Mr Hart The question is as to the nature and character of the original formations, and its subsequent changes up to 1848

The Court So far as the reference to the formation means the history of the formation, except that that is involved in the state of the deposit I do not see that it is necessary to go into that. Of course, reference to the action of geological forces will be brought out, and it is difficult to draw the defining line. I desire

if you can, that you confine it to the actual condition of things at the time mining was commenced there. There is an objection that the witness has not shown himself to be a geologist, but I do not understand that you insist on that objection.

Mr Cadwalader He does not pretend to be a geologist. K to witness? Do you, Mr Smith?

A. I have a pretty thorough knowledge of these ~~subject~~ ancient gravel channels of California, and I have studied their geological features very carefully.

Q. That is not what I asked you. I asked you whether you are a geologist?

A. No sir, I am not, except that I consider myself very well in-

formed about these particular ancient river beds

Mr Belcher That, we think, would render him entirely competent with respect to this department of geology to testify

Mr Cadwalader I understand that the ruling is that he cannot testify on the subject of geology at all

The Court There geological changes; but he can describe the condition of the river beds so far as they are subject to being worked

Mr Start We have no objection to that

Mr Belcher That is all that the question was directed to

The Court It is understood then, that that is the line to which it will be confined, and that-

you have no objection to that-

Mr. Hart I have no objection to that, but this question goes entirely beyond that-

Mr. Belcher What do we understand to be the limit that The Court puts upon the question now?

The Court He may describe the geological formations, as they are at present, or as they were when mining operations first commenced, and their distribution, etc

Mr. Belcher And the Court, as I understand, excludes, at this time, at least, testimony as to the formation and proof changes?

The Court They are merely geological theories

Mr. Belcher Will the Court, then, permit us to prepare and submit an

offer in regard to so much of this question as The Court non-excludes?

The Court Certainly
Mr Belcher Hereafter
Mr Dibble Describe the
 formation of these gravel channels of which this is a part, with reference to the strata deposits therein?

A. I would like, which I think will add, perhaps, to the convenience of Your Honor, to refer to this map. It is an official map. It is a map of the great valley of California, of the country from Tulare Lake, up to the iron cañon, below Reading

Mr Cadwalader I object to this map. The question does not call upon him to lay this whole subject before us

The Court I cannot

tell what his answer will be

{ The map referred to was marked "Hamilton Smith, No 1." And the witness produced a second map. }

The Court Is that another map? A. Yes.

2. Have you seen it?

Mr Hart Yes, I have looked at it

The Court Have you any objection to it?

Mr Hart No sir, none that I know of.

The witness This is a map lately prepared by Professor Whitney, and published with his last volume on "The Auriferous Gravel Deposits of California."

{ The map was entitled "Map of the ^{tertiary} ~~tertiary~~ Auriferous Gravel Deposits."

Mr Dibble By what authority was that map

prepared?

Mr Cadwalader What is the date of that map?

A. The map is dated in 1873

Q. This map is a compilation, is it not, Mr Smith. It does not purport to be based on the personal observations of Professor Whitney?

A It is based largely on the surveys which were made by Professor Whitney when he was chief of the Geological Survey of California

Q. I will ask you whether it does not purport to be based wholly upon information furnished him by surveyors and County Assessors?

A No sir. Not at all. The gravel deposits indicated here, and the lava deposits form the important features of the map.

There is one other plan or profile which I would like to present

Q. Whose map is that?

A. That is my own

Q. That is your own?

A. Yes. That is a copy of a section which I made some 10 years ago

Mr Hart What does that purport to be?

A. The section of the gravel channel, the old gravel channel from the South Yuba, at French Corral to the Middle Yuba at Snow Point

Mr Cadwalader That is Smith's Section of the Yuba?

A. It is a section showing the position and depth of the ancient gravel channel

Q. On the Yuba?

A. On the ridge between the middle and south forks of the Yuba River

Q. On the Yuba River?

A. On that particular

part of it

Mr Dibble Now will you answer the question I last asked you. Describe the maps nos. 1, 2, and 3?

A These ancient-auriferous gravel channels, or gravel beds, extend in California, beginning with Mariposa County, and extending up to Del Norte County, or Siskiyou County in the extreme north. Gravel, as a general thing, is situate -

Mr Cadwalader {Intg} We want this witness to speak from personal observation only

The Witness Will your Honor allow me to say a few words. If I am not interrupted it will take but a very short time to explain this. Shall I describe these maps now?

Mr Dibble Yes.

A. Map No. 1 is a map

of the great valley of California, extending from the iron cañon, near Redding, on the Sacramento River, down to the extreme southern drainage of the San Joaquin Valley, and embracing what is generally known as the Great Valley of California. That map was prepared under authority of the United States Government, to accompany a report prepared by Gen. Alexander, Col. Mendel, and Prof. Davidson, which was made, I believe, directly to Congress. The map itself states that, and illustrates the general topography of the valley and its drainage.

2. It was published with the report?

A. It was published with their report, of

which it forms a part. -
 Map No 2 is a map of
 the "Tertiary Auriferous
 Gravel Deposits, and
 was made under the
 direction of Prof Whitney.
 The section lines,
 and the position of the
 river beds, have gen-
 erally been taken, I
 believe from the United
 States Survey, and the
 position of the gravel
 beds, and of the lava
 deposits have been de-
 termined by observa-
 tions, by persons acting
 directly under the di-
 rection of Prof Whitney

Q. Who was Prof Whitney?

A. Prof Whitney was for
 several years in charge
 of the geological survey
 of California, and he
 is now at Cambridge.
 He has lately published
 a volume describing
 in a very detailed way

these auriferous gravel deposits, and this map forms a portion of that volume, and is attached to that volume. Plan No 3 is a section, showing the ancient gravel channel, extending from the South Yuba, at French Conal to Snow Point, on the Middle Yuba, showing the gravel deposits on what is generally known as "the ridge" in Nevada County, being that ridge of land situate between the south and middle forks of the Yuba River

Mr Cadwalader That is a map showing the length -
 as (intg) It shows the length and depth of the gravel deposits, but not the width, of course

Mr Dibble Now answer the previous question that I asked you. Describe the formation of these gravel

channels of which this is a part, with reference to the strata deposits therein? A. These ancient river deposits commence in a small way in Mariposa County, and extend from thence northward, all along the slope, the western slope of the Sierra Nevada Mountains, and they extend over the Coast Range into Trinity County.

Mr Cadwalader I would like to have this witness speak only from his general observation.

The Court I suppose that is understood.

The Witness These ancient gravel deposits are found in 17 Counties, I think, of the State. There are also gravel deposits in considerable extent in the Coast Range Mountains - but they are not auriferous, and have never

been exploited, and but little is known of their extent. These channels are generally situated at a very considerable elevation, or the bottom of the channels is generally situate at a very considerable elevation above the present rivers, the present drainage of the State. The course of these channels is irregular. They were large ~~rivers~~ rivers, no doubt. They were large rivers, draining the mountainous district, and were just as irregular and crooked as the present rivers. The rivers must have been of large extent, carrying great volumes of water, judging from the character of the material which they transported down their beds.

The Court Confine Your

self to the present appearance of the channels

The Witness It is impossible, Your Honor, ^{without} ~~to~~ make some allusion ~~at~~ occasionally to what has been in the past, to describe them as they are now, and to give an intelligent description of them. The plan of Prof. Whitney, Map No 2, shows the extent of these gravel deposits for a small portion of the district, which I have described. That is, he shows the gravel deposits on the ridge between the middle and South Yuba, and between the South Yuba and the American and Bear Rivers, and a portion of the drainage of the American River. From an examination of this plan of Prof Whitney, it is easy to see how irregular and

crooked the course of these old river channels is. As I said before, they are just as crooked or nearly as crooked as streams like the American and Yuba Rivers. They are not quite as crooked, though, because these streams were larger, and the larger a stream passing through a mountainous country, of course the more gradual its bends will be. The general course of the gravel channels, as indicated on this map of Professor Whitney, shows a drainage from the east to the west. These ancient rivers had small ravines and branches, creeks just as the present rivers have, and in order to arrive at a correct appreciation of the condition of these

ancient river beds - I will interrupt myself for a moment to say that a large part of this -

Mr Cadwalader (Intg)

I object to the airing of these geological theories, and to the witness speaking beyond his own personal observation

The Court The objection is overruled

The Witness (Contg) In many places these ancient channels are covered with large top deposits of lava or ^{two facious} ~~trifacious~~ lava, and it is impossible to say what their exact position is, unless the present observer could see their exact position. He is compelled, in many places to theorize more or less as to the position of these channels. For instance, on each side

of a ridge, he may see the gravel channel. He imagines that it emerged from one side of the ridge, and entered on another side, and from his experience in other places, he may be certain that the gravel channel extended through that ridge. So it is not a matter of opinion purely, It is a matter of certainty in regard to the course of these channels. As I said before, these channels have a gradual drainage, and a descent to the Yuba River, or to the Sacramento Valley, all along their course.

They were crooked and irregular very often, but their drainage was in the same direction, as the present drainage from the Sierra Nevada

Mountains, The grade of these ancient river channels is larger, considerably larger than the grade of the present river beds. As an illustration of that, at the Gold Run Mines they are situated some ~~7000~~ 1100 or 1200 feet, I think above the bed of the American River - their bed rock. The same gravel channel or the main branch of it, is found just below Smartsville, and the bed rock there is much lower than the tide water. From the elevation of these ancient river beds, above the present streams, they have been easily attacked, and easily reached, and so that - fact, and so the fact that these channels are situated consider

ably above the present drainage, is due in a great measure, the successful mining for gold in California

Mr Cadwalader I object to that as being a pure theory, not called for by the question

The Court Directed the last portion of the answer relative to successful mining to be stricken out

The Witness I would like to describe how the gold ^{which} ~~that~~ was taken out by the first miners in California came unquestionably from these gravel deposits, and I am as certain of that as any man would be, who looks into the question at all, as I am that this house was built by the hand of man, and that it did not come here by accident

{ The last statement of the

witness was stricken out
by consent }

The Witness The present
miner is able to esti-
mate the amount of gold
contained in these ancient
channels by the result
of past experience in
mining upon them

The Court We want to get
at testimony that bears
on the case, and we have
to do with the proposition
of successful mining no
further than it bears on
the question of how much
will probably be washed

The Witness The amount that will
probably be washed, will depend in
a great measure, on whether it pays
to wash it or not

Mr Dibble Now give to the Court as
concisely as you can, an
account of the progress of
gold mining in California
from 1848, to the present
time? ————

Recess until 2 o'clock P.M.

